USDA United States Department of Agriculture
Natural Resources Conservation Service

Colorado
Water Supply Outlook Report
June 1, 2021

Hydrologist Heather McIntyre and Zack Wilson make their way up to the Medano Pass SNOTEL for repairs on May 4th from Great Sand Dunes National Park. Despite a fresh dusting of snow on Mt. Herald (pictured above), much of the mid-level snowpack had melted out in the Sangre de Cristo Mountains by early May.

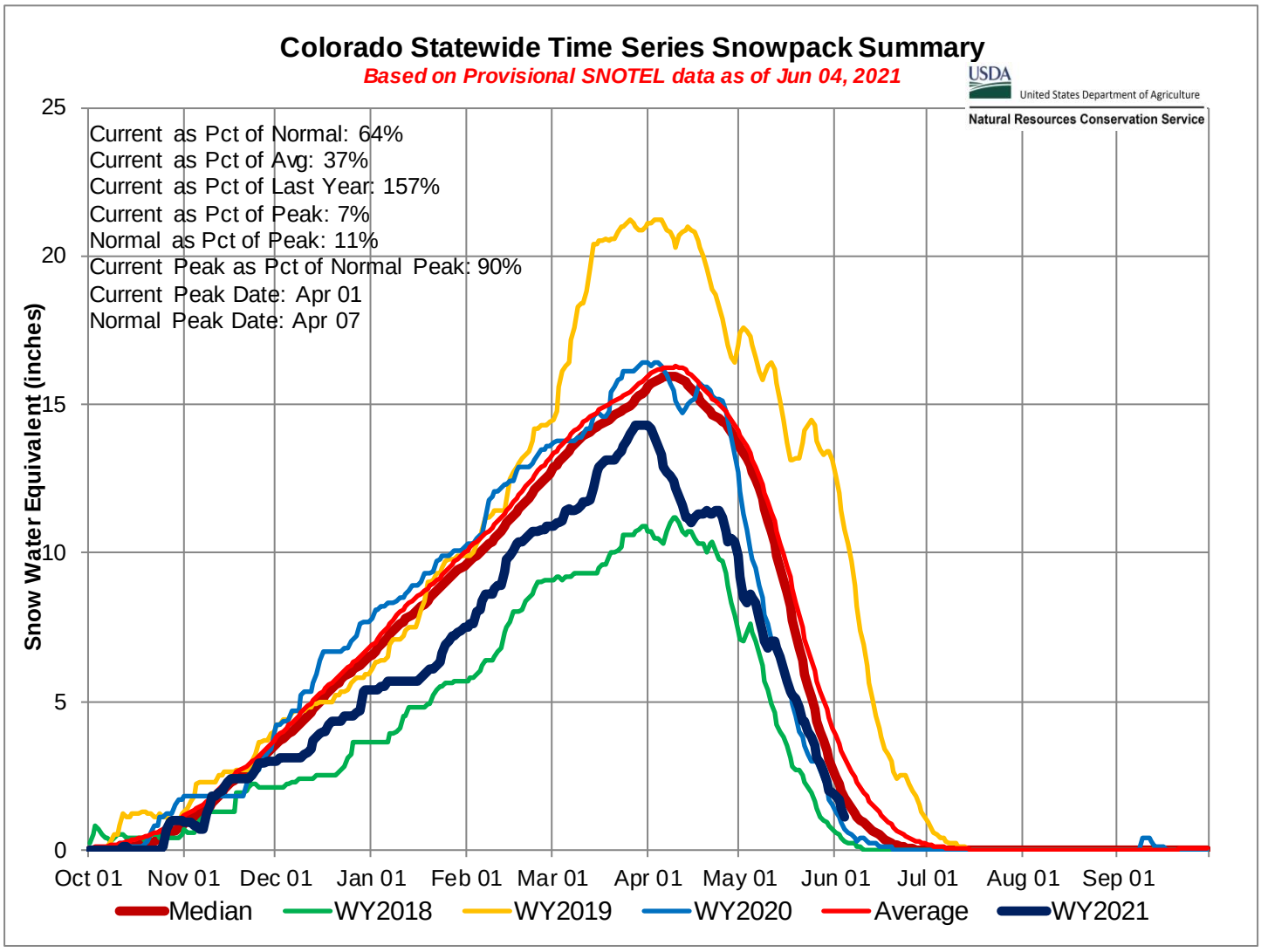
Photo By: Heather McIntyre

REMINDER: We are soliciting field work photos from the field again this year. Each month we will pick one to grace the cover of this report! Please include information on where, when and of who/what the photo was taken.

Contents

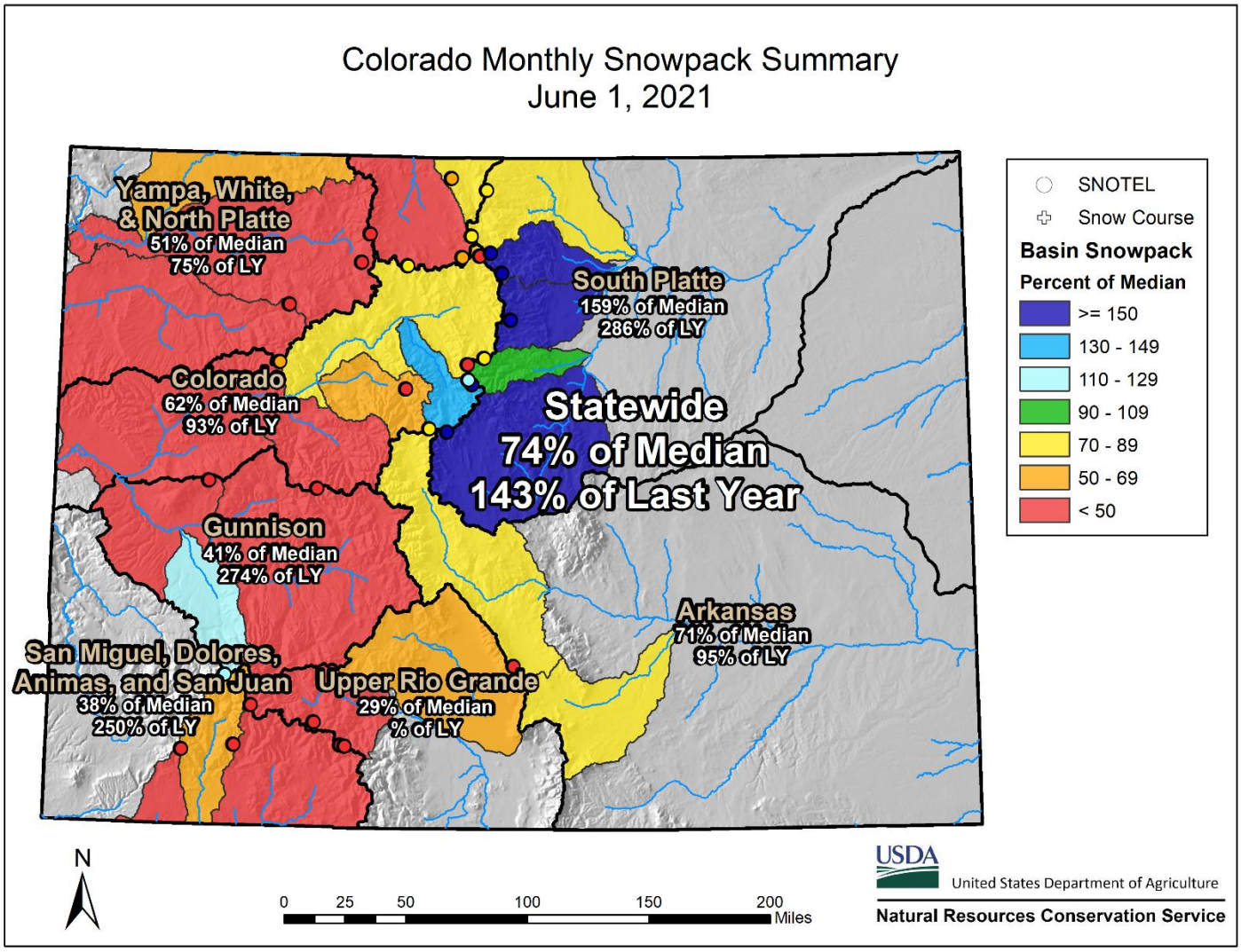
Colorado Statewide Water Supply Conditions

Summary



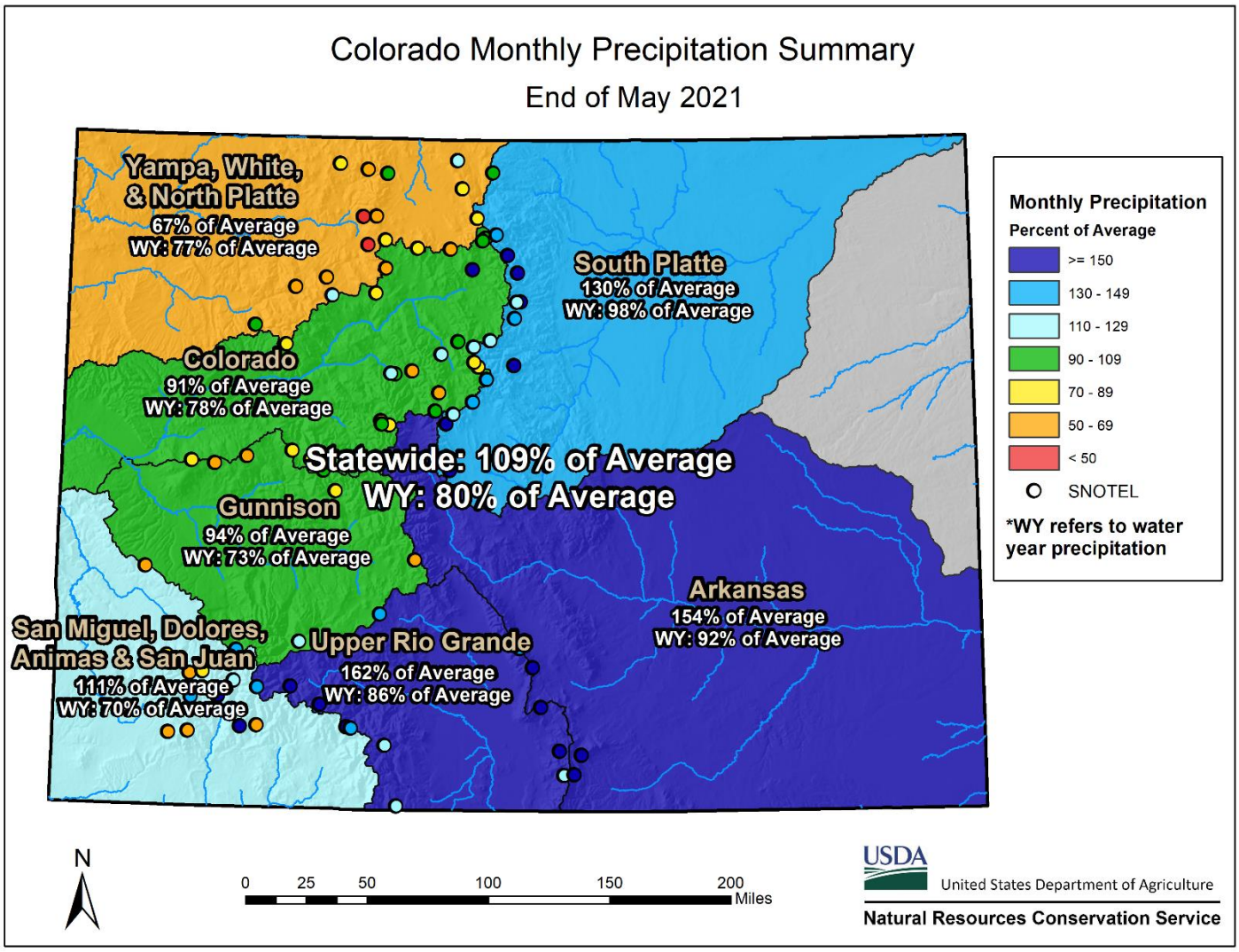
Water supply conditions across Colorado continue to be highly variable this year but have led to below average water supply forecasts across all major basins. The warm and dry conditions of last summer are unfortunately rolling over into 2021. Dry soils resulting from the ongoing drought have impacted how snowmelt transitions into streamflow runoff. Compared to similar snow accumulation years, the dry soils and antecedent drought conditions substantially reduce the amount of water entering stream channels. In addition to soil moisture and other environmental conditions, the other lingering effect of the ongoing drought is reservoir storage in parts of the state that have remained the driest, particularly in southwest Colorado. Water supply forecasts for total volume of April-July streamflow range from a low of 26 percent of average on the combined Yampa-White River basins to a high of 95 percent of average in the South Platte, with most of Western Colorado being near to below 50 percent of average streamflows. As in any year, future temperature and precipitation patterns can still change a lot, but at this point in the runoff season it is vital to continue to keep a close watch on streamflows, reservoir storage, and overall changing water supply conditions across the state.

Snowpack



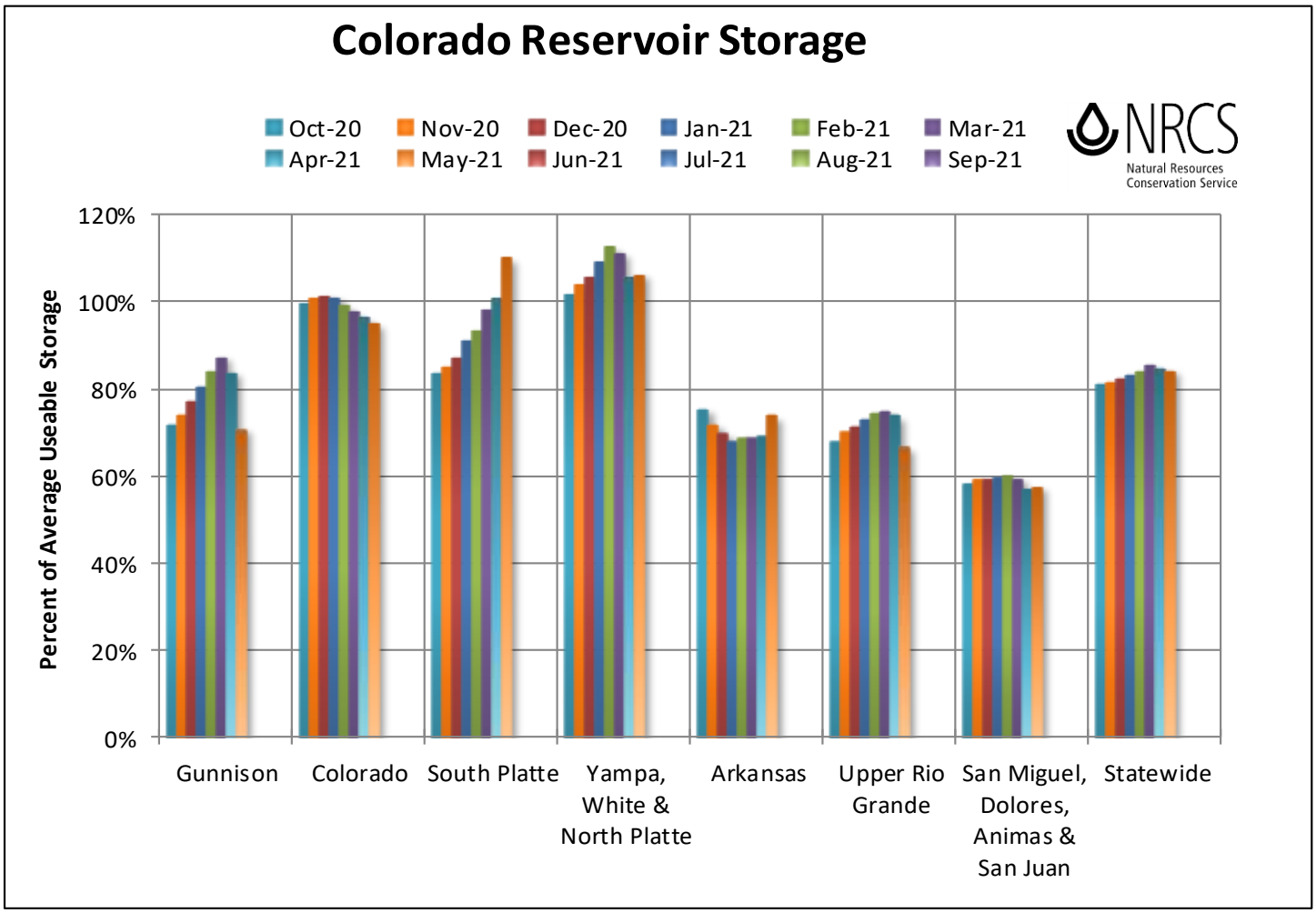
Snowpack across much of the state has diminished rapidly due to above average temperatures and below normal snowfall last month. Statewide snowpack is currently 74 percent of median and every major basin currently has a below normal snowpack, except for the South Platte river basin. As of June 1st, 63 percent of all SNOTEL stations across Colorado have fully melted out. The stations that have melted out are scattered across the state at different elevations and aspects, but the majority are in the southern mountains. These southern river basins experienced less snowfall and warmer temperatures, resulting in faster snowmelt rates. Exposed dust layers in these areas could also be a contributing factor to these melt rates. As of June 1st, the Gunnison, Rio Grande, and the combined San Miguel-Dolores-Animas-San Juan river basins are 41, 29, and 38 percent of median, respectively. Despite the meager snowpack, these basins benefited from several large snow events during the first half of May which helped improve snow conditions compared to this time last year. Further to the north, the Gunnison, Colorado, and combined Yampa-White-North Platte river basins are 41, 62, and 51 percent of median. Highlands east of the Continental Divide saw cooler temperatures, and abundant snowfall. The South Platte river basin benefited the most from these storms and currently has 159 percent of median snowpack. Lastly, the Arkansas river basin is currently 71 percent of median. Overall, snow totals across the state this winter were below normal, which will likely mean that drought conditions will persist state-wide this summer.

Precipitation



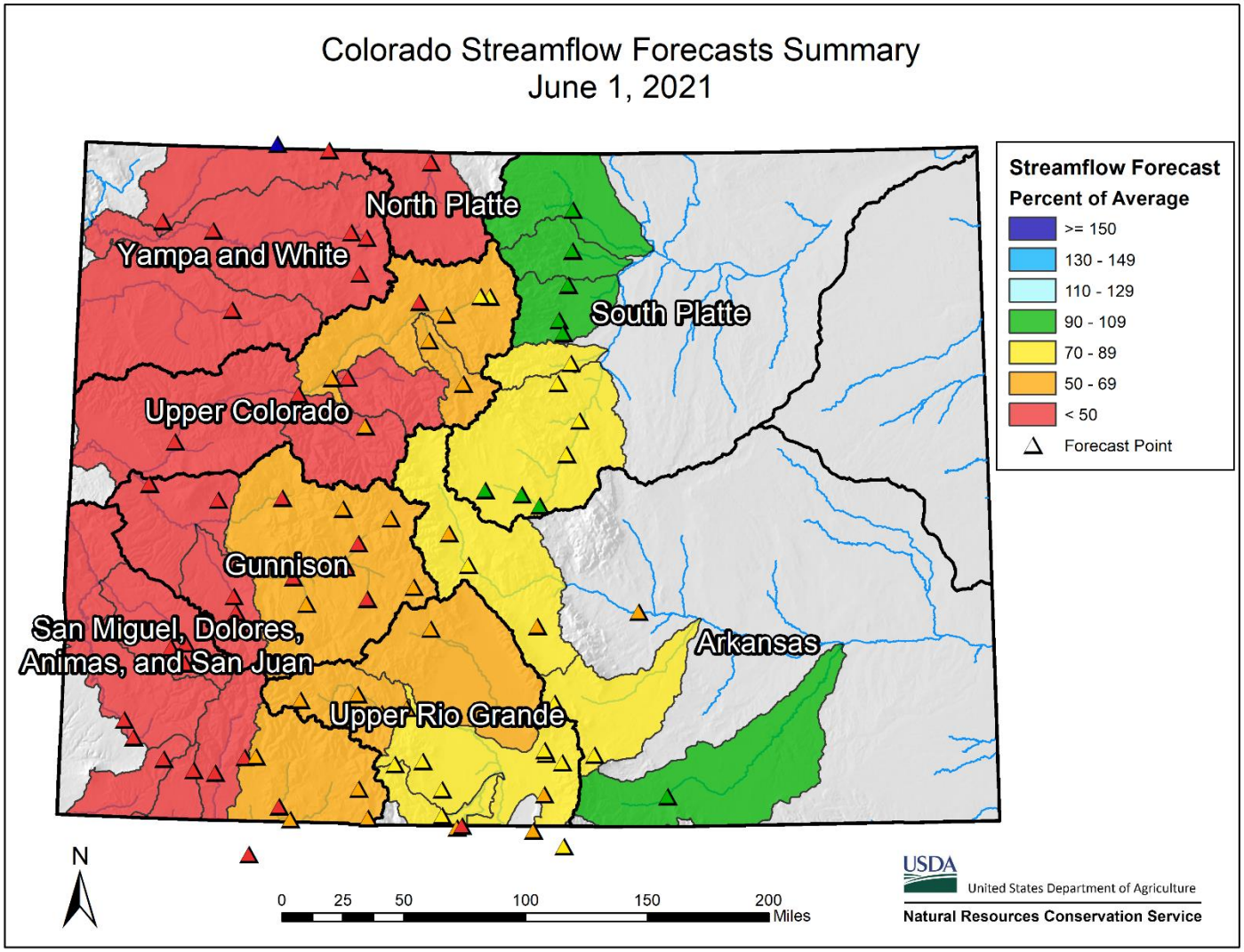
May brought needed precipitation to much of Colorado delivering 109 percent of average precipitation statewide for the month. As of June 1st, the water year-to-date precipitation for Colorado was 80 percent of average. Like earlier this season, eastern river basins received the most precipitation when compared to historical averages. The South Platte, Arkansas and Upper Rio Grande river basins all received above average precipitation during May at 130, 154 and 162 percent of average precipitation, respectively. The combined San Miguel-Dolores-Animas-San Juan river basins also received above average precipitation with 111 percent of average. The Colorado and Gunnison river basins received 91 and 94 percent of average precipitation during May, respectively. The only basin that received substantial below average precipitation was the combined Yampa-White-North Platte river basin which ended May at 67 percent of average. Although the month of May brought helpful moisture statewide, the precipitation for the water year remains below average for every major river basin in Colorado. As of June 1st, the South Platte and Arkansas river basin has the highest percent of average water year-to-date precipitation, which is 98 and 92 percent of average, respectively. The Rio Grande sits at 86 percent of average, while the remaining major river basins on the Western Slope range from 70 to 78 percent of average water year-to-date precipitation.

Reservoir Storage



Despite above average precipitation over most of the state during May, the statewide reservoir storage declined to 84 percent of average and now sits at 55 percent of capacity. Reservoir storage is highest in the South Platte river basin at 110 percent of average and the combined Yampa-White-North Platte river basin at 107 percent of average. Reservoir storage in the Colorado river basin is 95 percent of average, down from 115 percent of average last year. While water storage volumes have improved for the northern half of the state, reservoirs in the southern portion of the state all remain below average as compared to the end of May last year. After showing steady increases all winter in reservoir storage in the Gunnison River basin, the volumes started declining in March, down to 71 percent of average to end May. The storage levels for the Upper Rio Grande and Arkansas River basin are 74 and 69 percent of average, respectively. Reservoir storage in the combined San Miguel-Dolores-Animas-San Juan River basin is currently the lowest in the state at 58 percent of average. Increased precipitation during the month of May, including 24-hour precipitation amounts of greater than one inch around the Durango area on May 21st, resulted in a mere 1 percent increase in storage. Most of the river basins of the state were in the 90 to 100 plus percent of average range during the month of May last year except for the Upper Rio Grande and Arkansas river basins at 62 and 87 percent of average respectively.

Streamflow

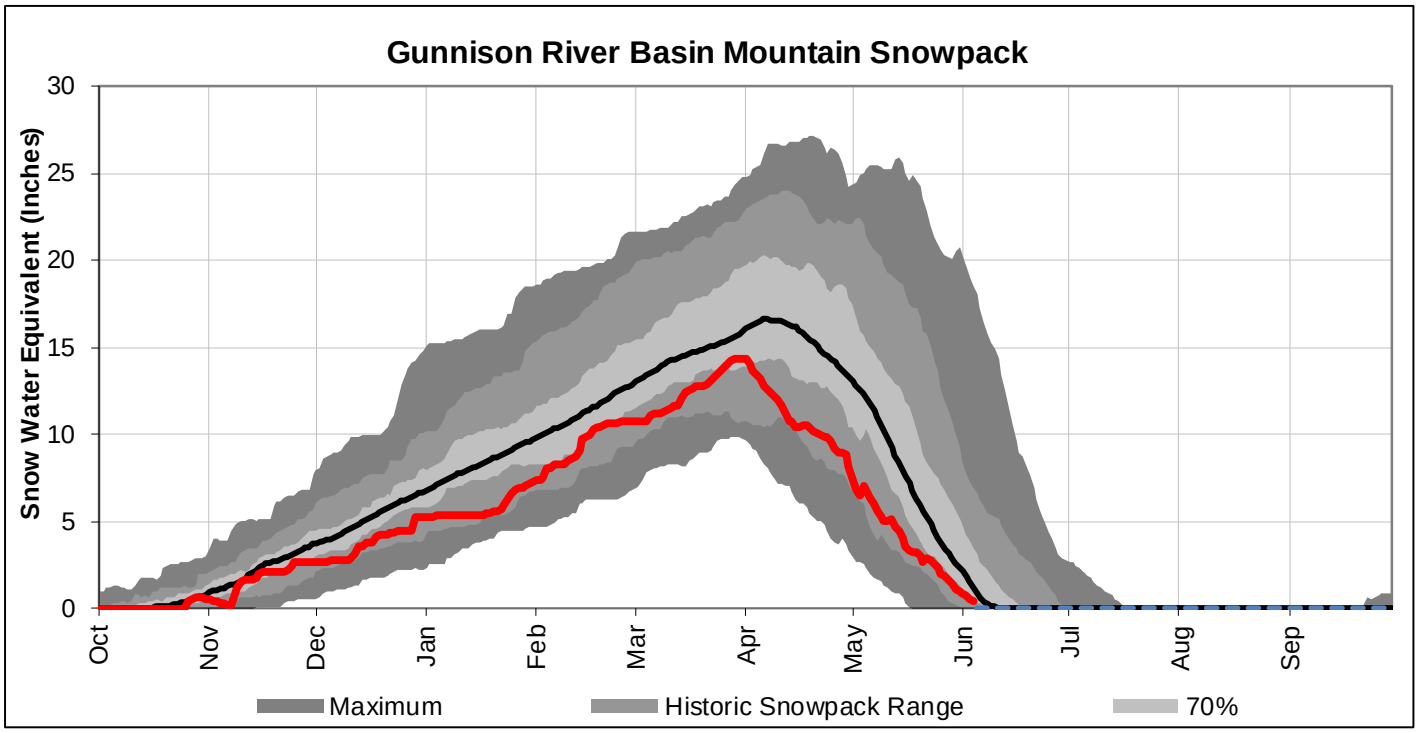


Despite increased precipitation for most of Colorado, streamflow forecasts continue to look well-below average for the state. The streamflow forecasts reflect regional precipitation trends in Colorado toward the end of this winter. The western half of the state shows the lowest streamflow volumes when compared to averages, while the eastern part of the state shows streamflows closer to historical averages. Streamflow volume forecasts range from 25 percent of average at multiple points in northwest and southwest Colorado, to 109 percent of average in the Arkansas Basin at Trinidad Lake inflow and 108 percent of average in the South Platte Basin at St. Vrain Creek at Lyons. The South Platte River basin shows streamflow at 95 percent of average, while the Arkansas River Basin shows 69 percent of average. The Upper Rio Grande and Colorado Headwaters show 52 and 48 percent of average streamflow, respectively. The Gunnison River Basin shows 40 percent of average streamflow, while the combined San Miguel-Dolores-Animas-San Juan show 36 percent of average streamflow as of June 1st. Based on the data in these reports, the most concerning region is in Northwest Colorado, where the combined Yampa-White-Little Snake River Basin shows 26 percent of average streamflow for June 1st. Many headwater basins in Colorado are well-below average streamflow; and since snow accumulation season is over, the water deficit caused by prolonged drought and below average snowpack is likely to increase.

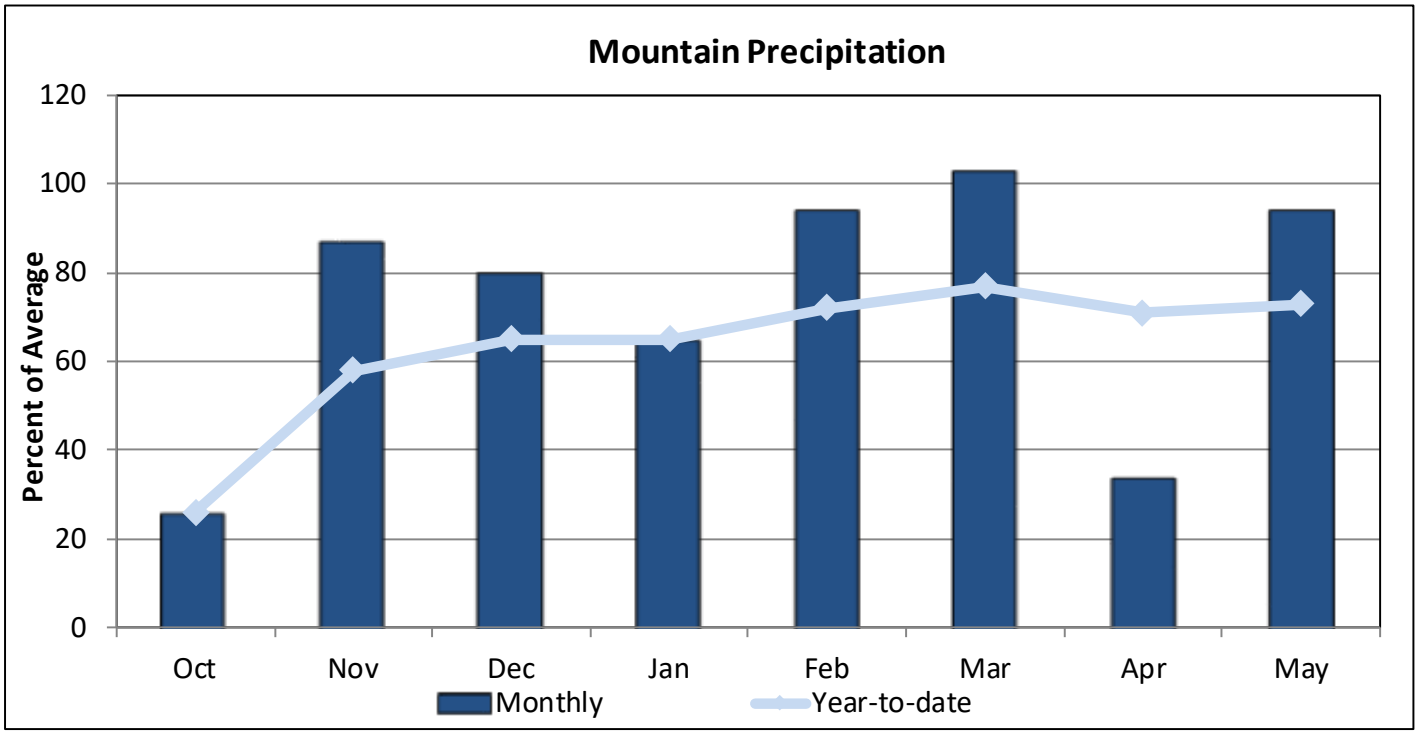
GUNNISON RIVER BASIN

June 1, 2021

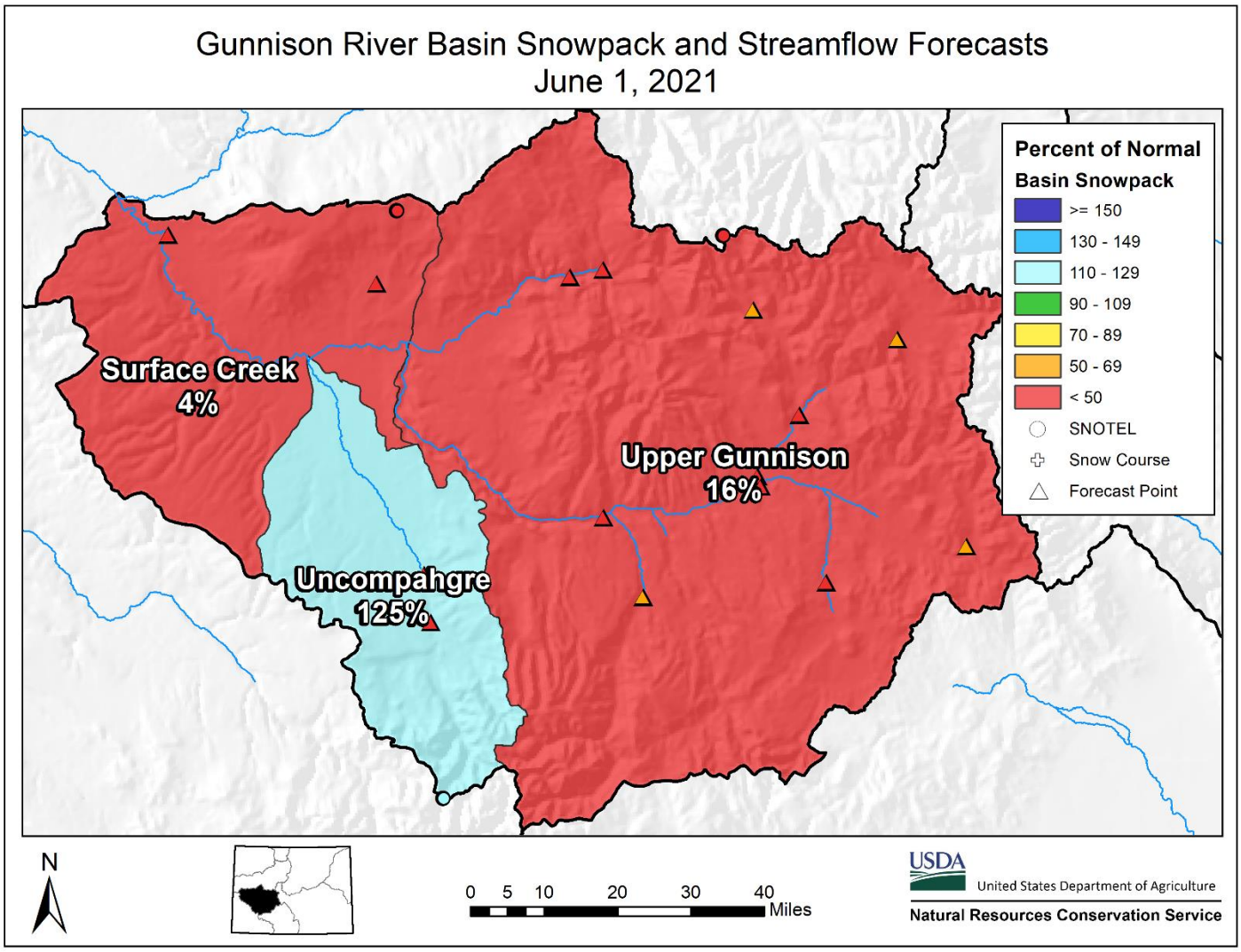
Snowpack in the Gunnison river basin is below normal at 41% of the median. Precipitation for May was 94% of average which brings water year-to-date precipitation to 73% of average. Reservoir storage at the end of May was 71% of average compared to 97% last year. Current April – July streamflow forecasts range from 18% of average on Paonia Reservoir Inflow to 59% of average at Taylor Park Reservoir Inflow.

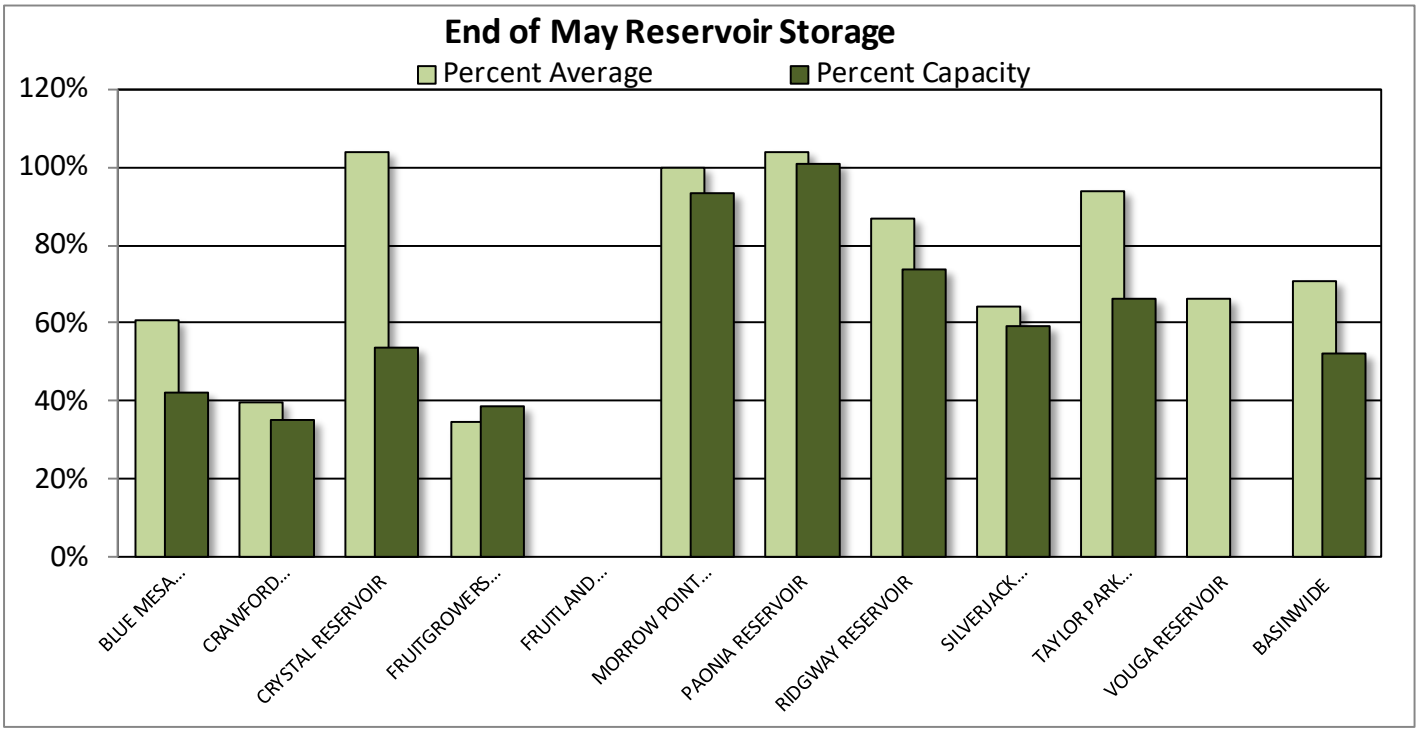


*SWE values calculated using daily SNOTEL data only



*SWE values calculated using first of month SNOTEL data and snow course measurements


Gunnison River Basin Snowpack and Streamflow Forecasts
June 1, 2021
Percent of Normal
Basin Snowpack
>= 150
130 - 149
110 - 129
90 - 109
70 - 89
50 - 69
< 50
SNOTEL
Snow Course
Forecast Point
Surface Creek
4%
Upper Gunnison
16%
Uncompahgre
125%
N
0 5 10 20 30 40
Miles
USDA
United States Department of Agriculture
Natural Resources Conservation Service


End of May Reservoir Storage
Percent Average
Percent Capacity
120%
100%
80%
60%
40%
20%
0%
BLUE MESA...
CRAWFORD...
CRYSTAL RESERVOIR
FRUITGROWERS...
FRUITLAND...
MORROW POINT...
PAONIA RESERVOIR
RIDGWAY RESERVOIR
SILVERJACK...
TAYLOR PARK...
VOUGA RESERVOIR
BASINWIDE

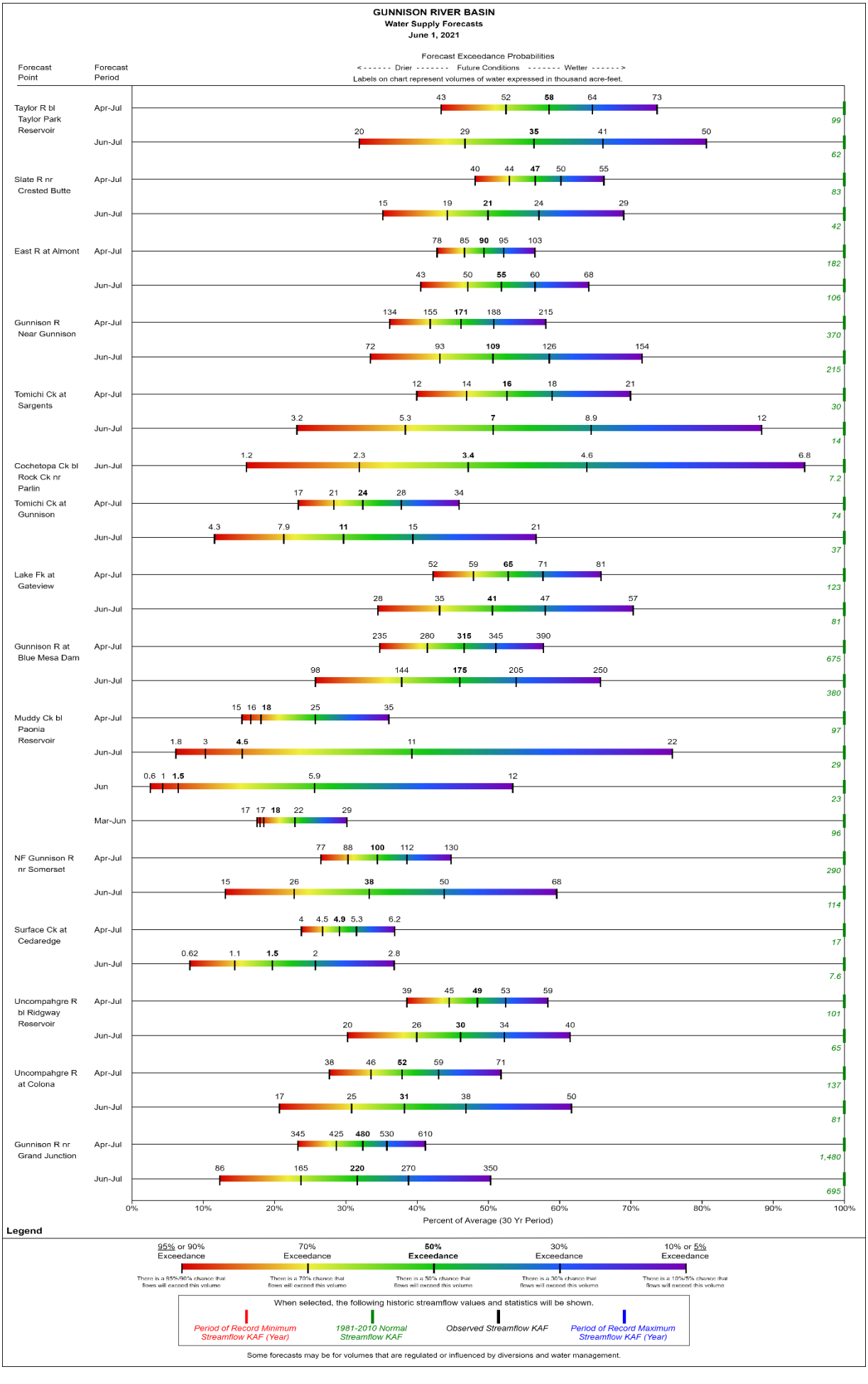
Watershed Snowpack Analysis June 1st, 2021

Sub-Basin	# of Sites	% Median	Last Year % Median
Upper Gunnison	10	16	5
Surface Creek	2	4	4
Uncompahgre	3	125	49
Basin-Wide Total	13	41	15

*SWE values calculated using first of month SNOTEL data and snow course measurements

Reservoir Storage End of May 2021

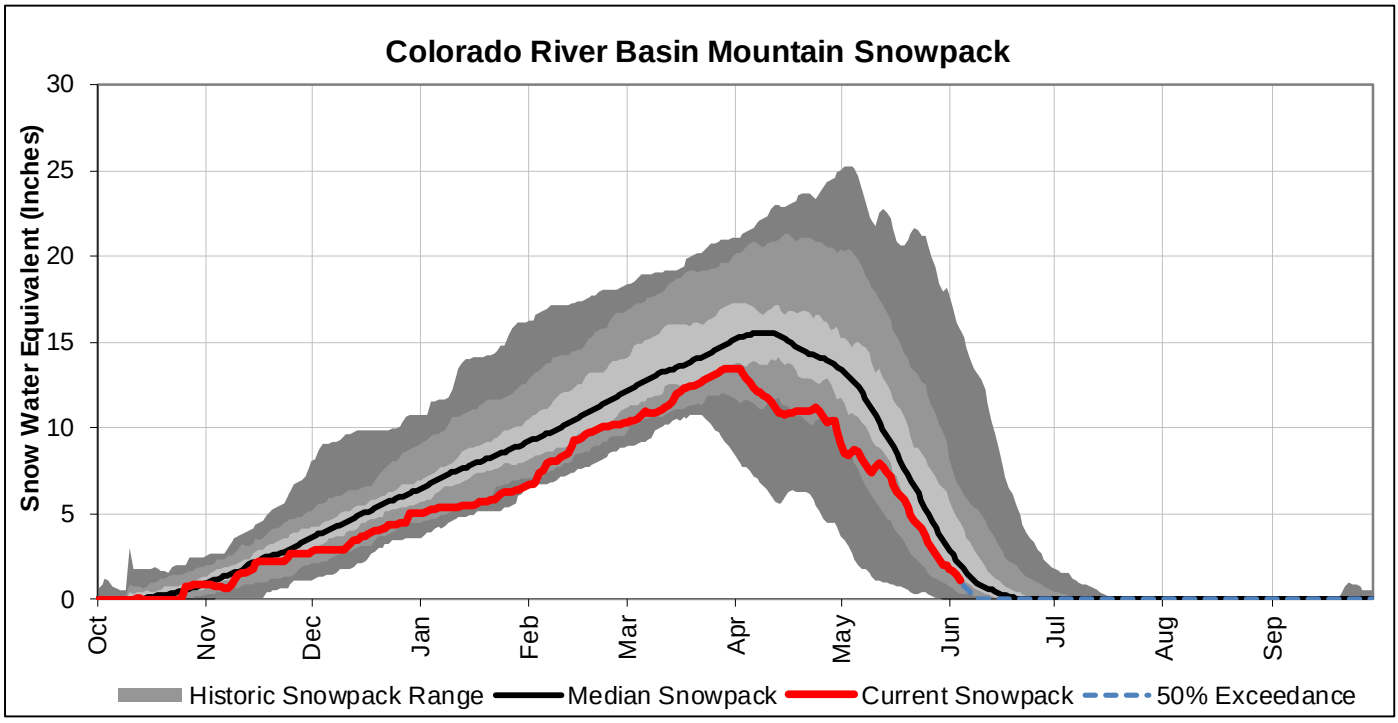
Reservoir	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
BLUE MESA RESERVOIR	350.0	549.7	575.3	830.0
CRAWFORD RESERVOIR	4.9	10.9	12.5	14.0
CRYSTAL RESERVOIR	9.4	9.7	9.0	17.5
FRUITGROWERS RESERVOIR	1.4	2.3	4.0	3.6
FRUITLAND RESERVOIR	0.0	3.1	6.2	9.2
MORROW POINT RESERVOIR	113.1	106.5	113.2	121.0
PAONIA RESERVOIR	15.5	15.6	14.9	15.4
RIDGWAY RESERVOIR	61.4	67.9	70.6	83.0
SILVERJACK RESERVOIR	7.6	9.4	11.8	12.8
TAYLOR PARK RESERVOIR	70.1	85.9	74.7	106.0
VOUGA RESERVOIR	0.6		0.9	0.9
BASINWIDE	633.8	861.0	893.1	1213.4
Number of Reservoirs	11	10	11	11


GUNNISON RIVER BASIN
Water Supply Forecasts
June 1, 2021
Forecast Exceedance Probabilities
< ------- Drier ------- Future Conditions ------- Wetter ------- >
Labels on chart represent volumes of water expressed in thousand acre-feet.
Forecast Point
Forecast Period
Taylor R bl Taylor Park Reservoir
Apr-Jul 43 52 58 64 73 99
Jun-Jul 20 29 35 41 50 62
Slate R nr Crested Butte
Apr-Jul 40 44 47 50 55 83
Jun-Jul 15 19 21 24 29 42
East R at Almont
Apr-Jul 78 85 90 95 103 182
Jun-Jul 43 50 55 60 68 106
Gunnison R Near Gunnison
Apr-Jul 134 155 171 188 215 370
Jun-Jul 72 93 109 126 154 215
Tomichi Ck at Sargents
Apr-Jul 12 14 16 18 21 30
Jun-Jul 3.2 5.3 7 8.9 12 14
Cochetopa Ck bl Rock Ck nr Parlin
Jun-Jul 1.2 2.3 3.4 4.6 6.8 7.2
Tomichi Ck at Gunnison
Apr-Jul 17 21 24 28 34 74
Jun-Jul 4.3 7.9 11 15 21 37
Lake Fk at Gateview
Apr-Jul 52 59 65 71 81 123
Jun-Jul 28 35 41 47 57 81
Gunnison R at Blue Mesa Dam
Apr-Jul 235 280 315 345 390 675
Jun-Jul 98 144 175 205 250 380
Muddy Ck bl Paonia Reservoir
Apr-Jul 15 16 18 25 35 97
Jun-Jul 1.8 3 4.5 11 22 29
Jun 0.6 1 1.5 5.9 12 23
Mar-Jun 17 17 18 22 29 96
NF Gunnison R nr Somerset
Apr-Jul 77 88 100 112 130 290
Jun-Jul 15 26 38 50 68 114
Surface Ck at Cedaredge
Apr-Jul 4 4.5 4.9 5.3 6.2 17
Jun-Jul 0.62 1.1 1.5 2 2.8 7.6
Uncompahgre R bl Ridgway Reservoir
Apr-Jul 39 45 49 53 59 101
Jun-Jul 20 26 30 34 40 65
Uncompahgre R at Colona
Apr-Jul 38 46 52 59 71 137
Jun-Jul 17 25 31 38 50 81
Gunnison R nr Grand Junction
Apr-Jul 345 425 480 530 610 1,480
Jun-Jul 86 165 220 270 350 695
0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
Percent of Average (30 Yr Period)
Legend
95% or 90% Exceedance
There is a 95%/90% chance that flows will exceed this volume
70% Exceedance
There is a 70% chance that flows will exceed this volume
50% Exceedance
There is a 50% chance that flows will exceed this volume
30% Exceedance
There is a 30% chance that flows will exceed this volume
10% or 5% Exceedance
There is a 10%/5% chance that flows will exceed this volume
When selected, the following historic streamflow values and statistics will be shown.
Period of Record Minimum Streamflow KAF (Year)
1981-2010 Normal Streamflow KAF
Observed Streamflow KAF
Period of Record Maximum Streamflow KAF (Year)
Some forecasts may be for volumes that are regulated or influenced by diversions and water management.

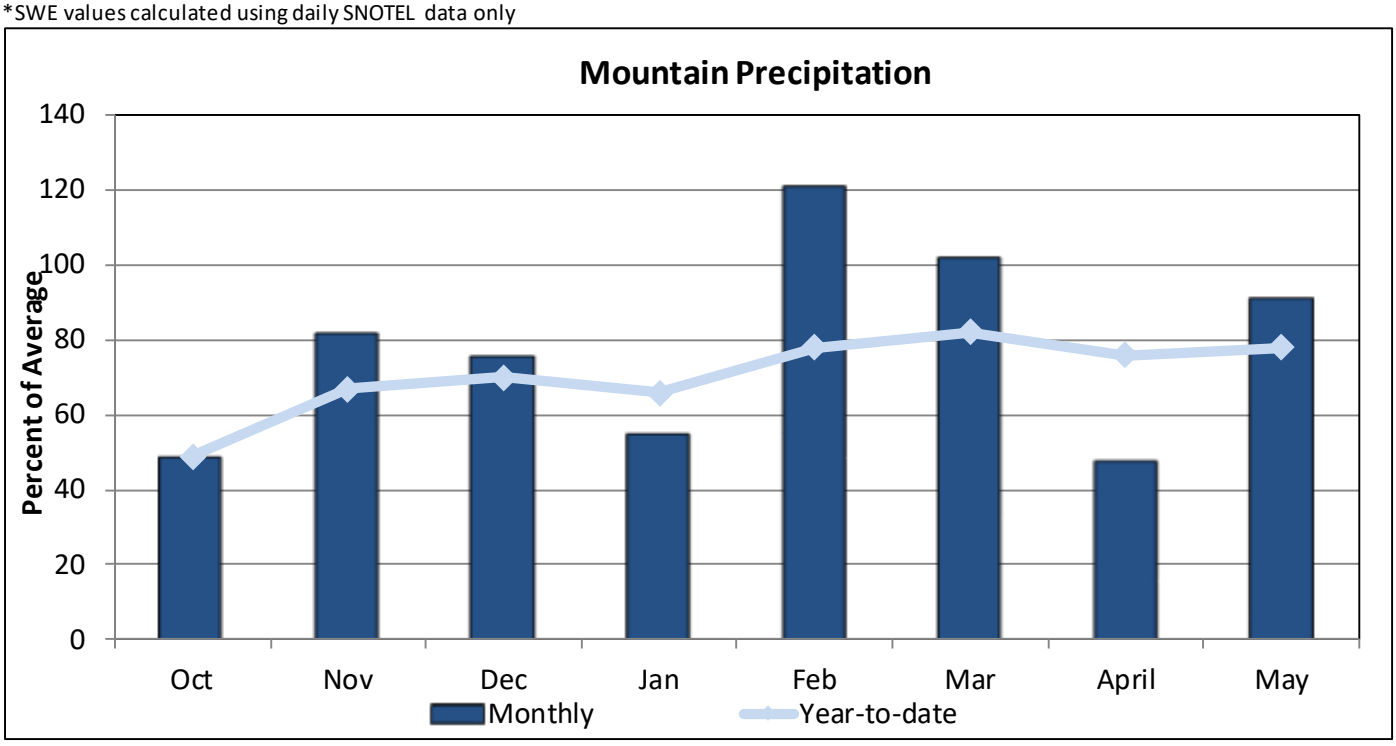
COLORADO RIVER BASIN

June 1, 2021

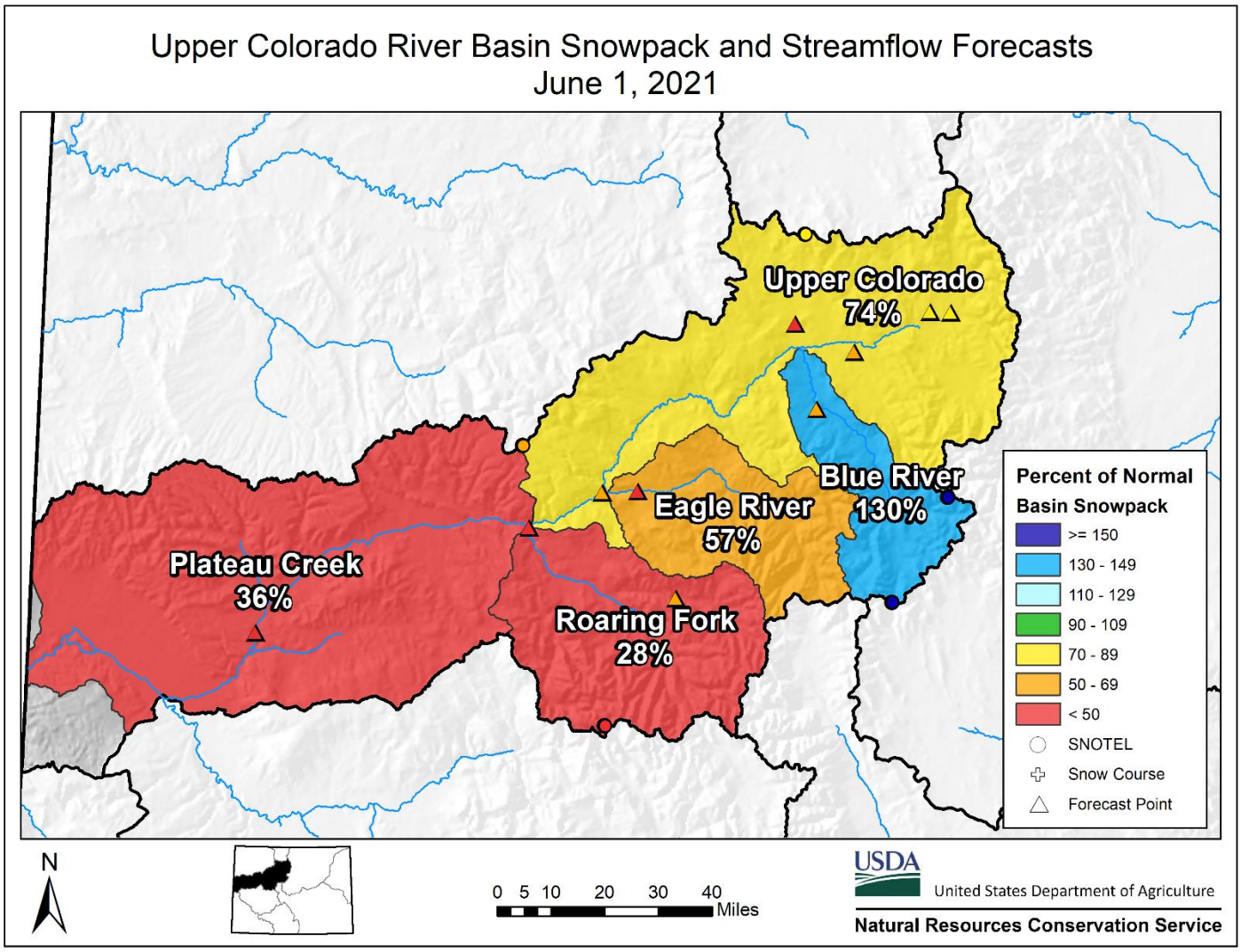
Snowpack in the Colorado river basin is below normal at 62% of the median. Precipitation for May was 91% of average which brings water year-to-date precipitation to 78% of average. Reservoir storage at the end of May was 95% of average compared to 115% last year. Current April – July streamflow forecasts range from 75% of average on the Lake Granby Inflow to 44% of average on the Wolford Mountain Reservoir Inflow.

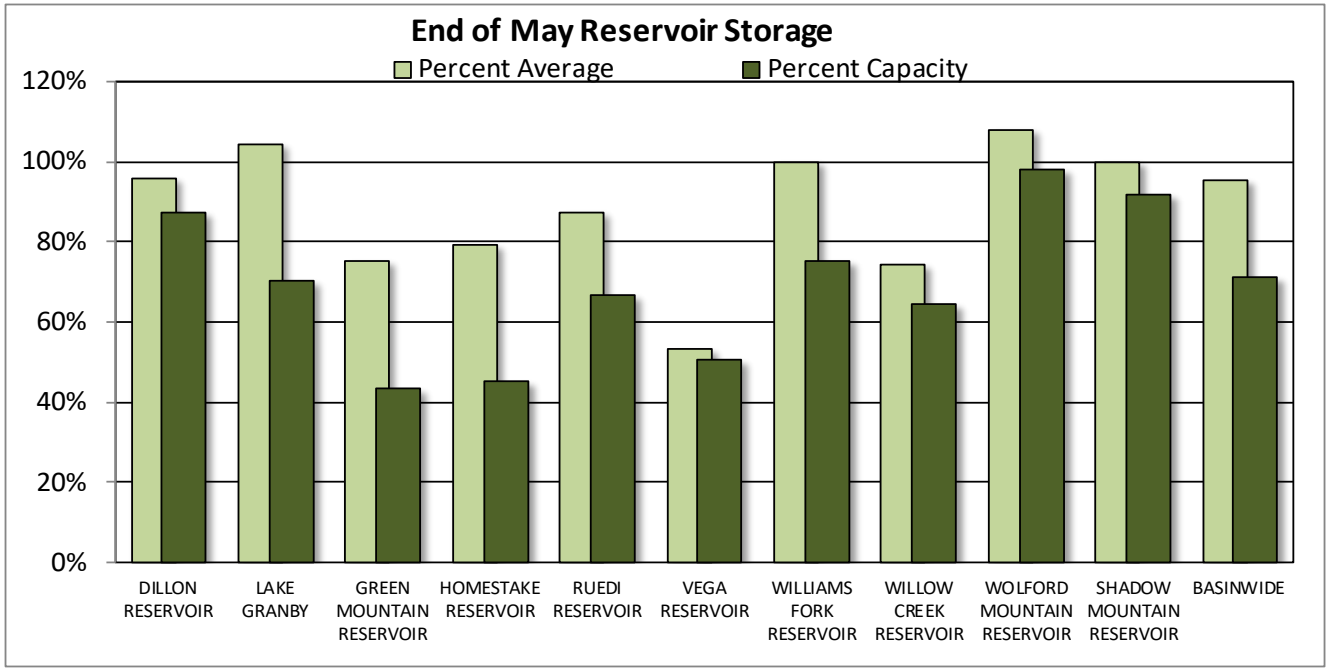


*SWE values calculated using daily SNOTEL data only



*SWE values calculated using first of month SNOTEL data and snow course measurements


Upper Colorado River Basin Snowpack and Streamflow Forecasts
June 1, 2021
Upper Colorado
74%
Blue River
130%
Eagle River
57%
Plateau Creek
36%
Roaring Fork
28%
Percent of Normal
Basin Snowpack
>= 150
130 - 149
110 - 129
90 - 109
70 - 89
50 - 69
< 50
SNOTEL
Snow Course
Forecast Point
N
0 5 10 20 30 40
Miles
USDA
United States Department of Agriculture
Natural Resources Conservation Service


End of May Reservoir Storage
Percent Average
Percent Capacity
120%
100%
80%
60%
40%
20%
0%
DILLON RESERVOIR
LAKE GRANBY
GREEN MOUNTAIN RESERVOIR
HOMESTAKE RESERVOIR
RUEDI RESERVOIR
VEGA RESERVOIR
WILLIAMS FORK RESERVOIR
WILLOW CREEK RESERVOIR
WOLFORD MOUNTAIN RESERVOIR
SHADOW MOUNTAIN RESERVOIR
BASINWIDE

Watershed Snowpack Analysis June 1st, 2021

Sub-Basin	# of Sites	% Median	Last Year % Median
Blue River	5	130	111
Upper Colorado	19	74	83
Muddy Creek	3	88	109
Eagle River	4	57	67
Plateau Creek	5	36	32
Roaring Fork	7	28	7
Williams Fork	3	60	98
Willow Creek	2		
Basin-Wide Total	28	62	64

*SWE values calculated using first of month SNOTEL data and snow course measurements

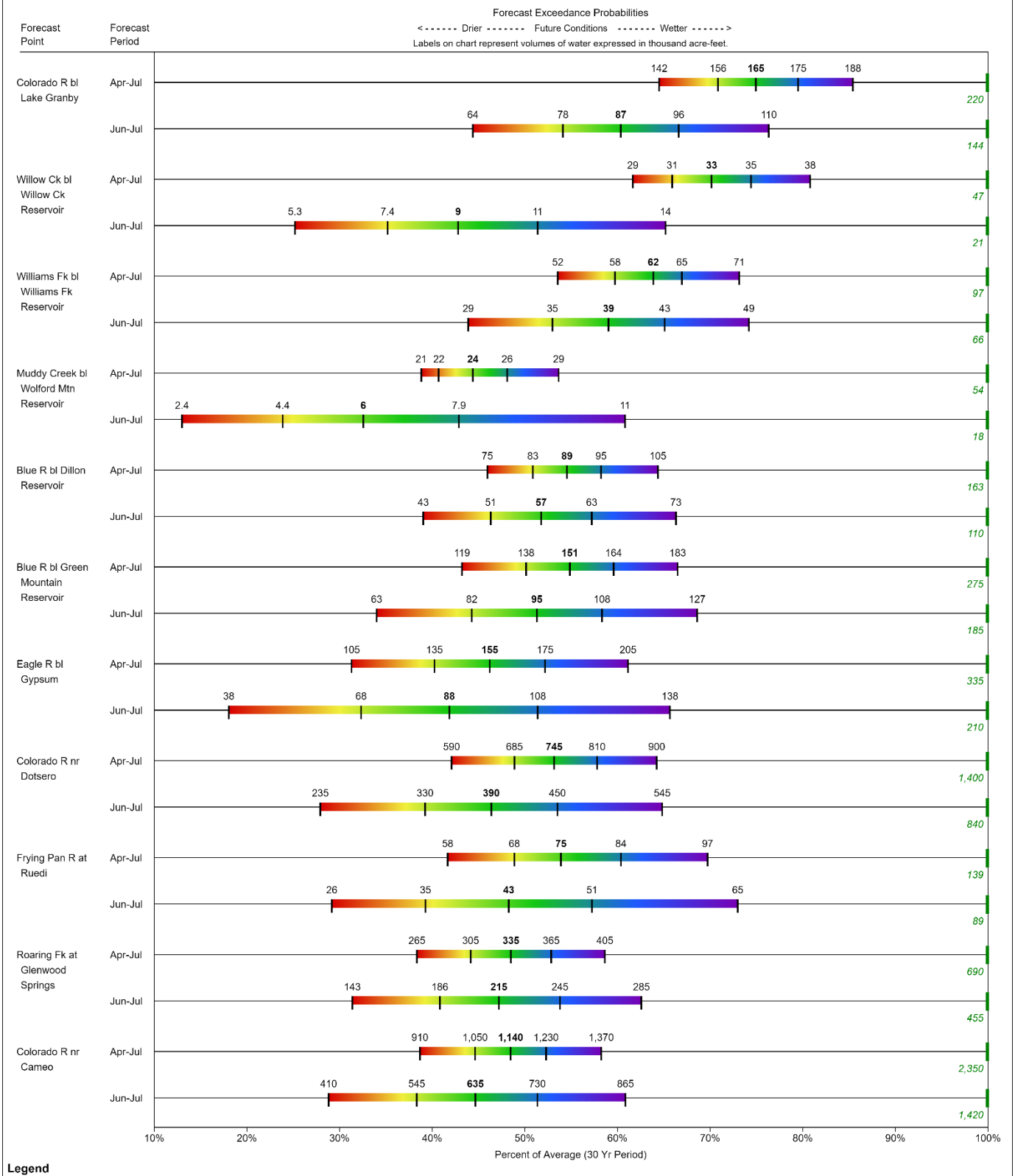
Reservoir Storage End of May 2021

Reservoir	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
DILLON RESERVOIR	218.0	240.7	227.8	249.1
LAKE GRANBY	327.1	404.0	313.6	465.6
GREEN MOUNTAIN RESERVOIR	63.9	100.3	84.9	146.8
HOMESTAKE RESERVOIR	19.5	29.1	24.7	43.0
RUEDI RESERVOIR	68.3	78.4	78.0	102.0
VEGA RESERVOIR	16.7	25.1	31.3	32.9
WILLIAMS FORK RESERVOIR	73.0	88.3	73.0	97.0
WILLOW CREEK RESERVOIR	5.9	7.4	7.9	9.1
WOLFORD MOUNTAIN RESERVOIR	64.6	65.8	59.9	65.9
SHADOW MOUNTAIN RESERVOIR	16.9	17.0	16.9	18.4
BASINWIDE	873.8	1056.1	918.0	1229.8
Number of Reservoirs	10	10	10	10

UPPER COLORADO RIVER BASIN

Water Supply Forecasts

June 1, 2021



Legend

95% or 90% Exceedance	70% Exceedance	**50% Exceedance**	30% Exceedance	10% or 5% Exceedance
There is a 95%/90% chance that flows will exceed this volume	There is a 70% chance that flows will exceed this volume	There is a 50% chance that flows will exceed this volume	There is a 30% chance that flows will exceed this volume	There is a 10%/5% chance that flows will exceed this volume

When selected, the following historic streamflow values and statistics will be shown.

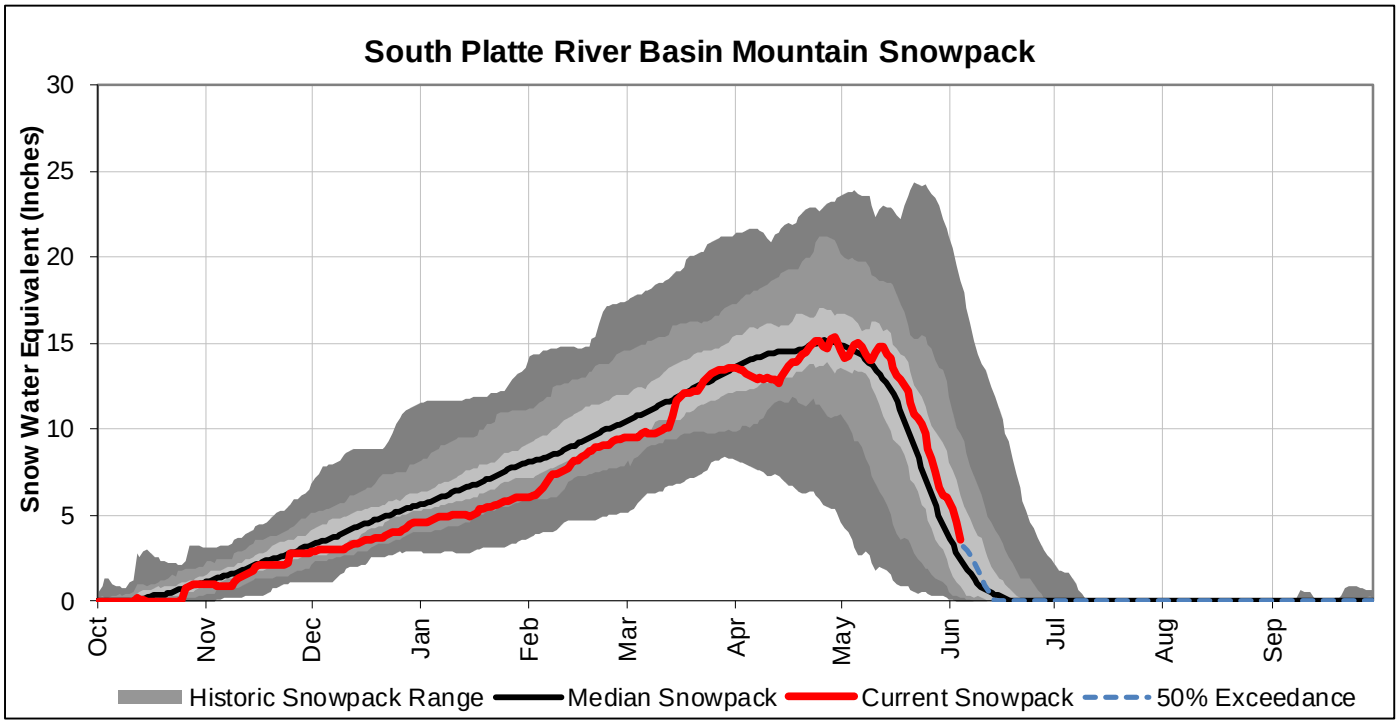
Period of Record Minimum Streamflow KAF (Year)	*1981-2010 Normal Streamflow KAF*	*Observed Streamflow KAF*	*Period of Record Maximum Streamflow KAF (Year)*

Some forecasts may be for volumes that are regulated or influenced by diversions and water management.

SOUTH PLATTE RIVER BASIN

May 1, 2021

Snowpack in the South Platte river basin is above normal at 159% of the median. Precipitation for May was 130% of average which brings water year-to-date precipitation to 98%. Reservoir storage at the end of April was 110% of average compared to 107% last year. Current June – July streamflow forecasts range from 109% of average on the St. Vrain Canyon at Lyons to 82% of average on the South Platte River at South Platte.



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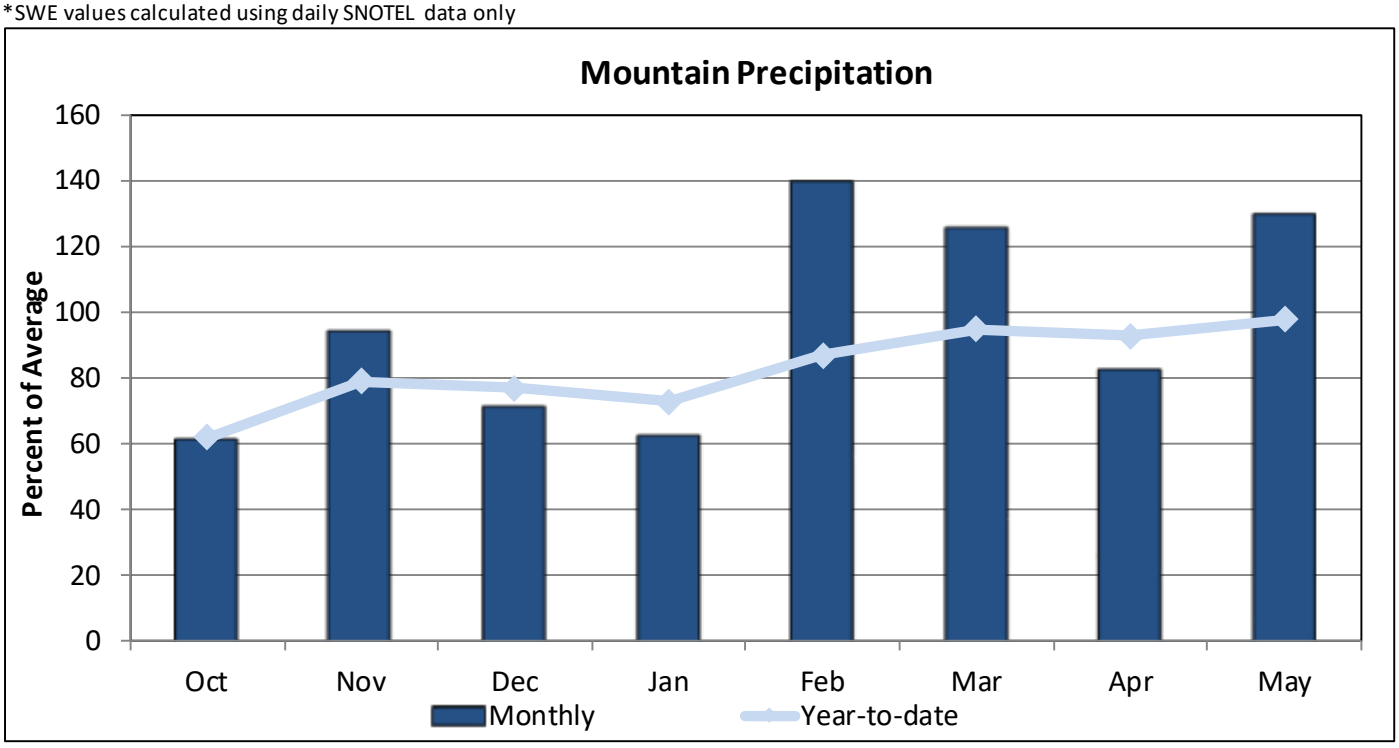
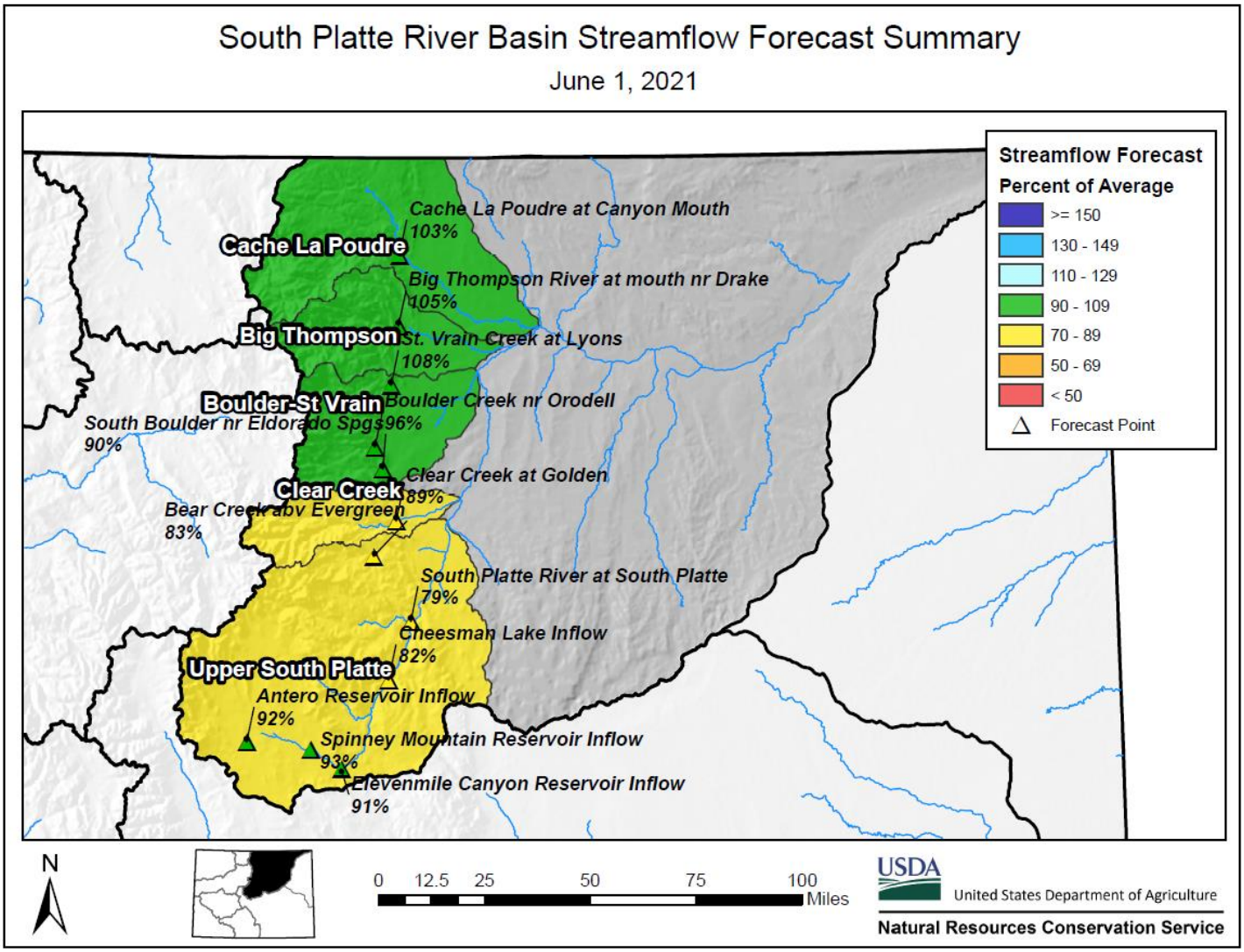
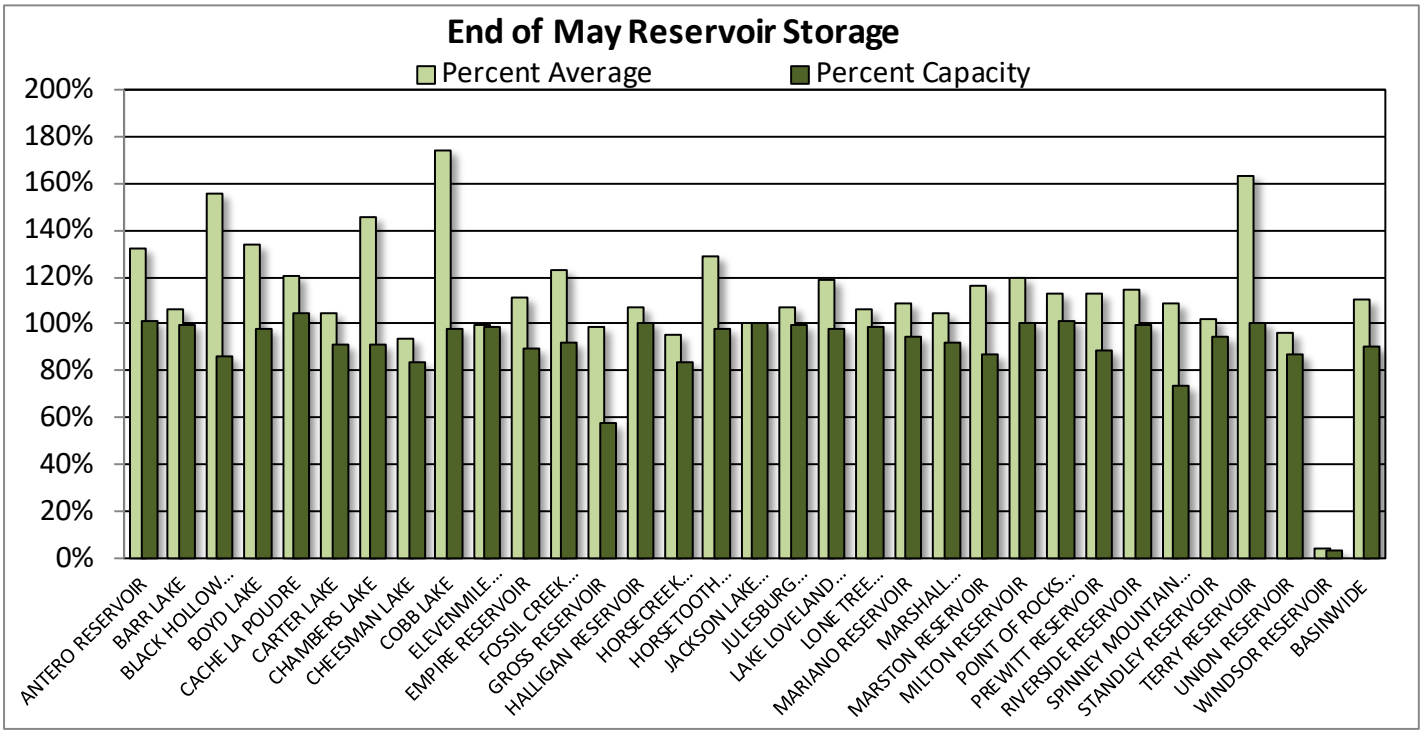


*SWE values calculated using first of month SNOTEL data and snow course measurements


South Platte River Basin Streamflow Forecast Summary
June 1, 2021
Streamflow Forecast
Percent of Average
>= 150
130 - 149
110 - 129
90 - 109
70 - 89
50 - 69
< 50
Forecast Point
Cache La Poudre
Cache La Poudre at Canyon Mouth
103%
Big Thompson
Big Thompson River at mouth nr Drake
105%
St. Vrain Creek at Lyons
108%
Boulder-St Vrain
Boulder Creek nr Orodell
96%
South Boulder nr Eldorado Spgs
90%
Clear Creek
Clear Creek at Golden
89%
Bear Creek abv Evergreen
83%
South Platte River at South Platte
79%
Cheesman Lake Inflow
82%
Upper South Platte
Antero Reservoir Inflow
92%
Spinney Mountain Reservoir Inflow
93%
Elevenmile Canyon Reservoir Inflow
91%
N
0 12.5 25 50 75 100
Miles
USDA
United States Department of Agriculture
Natural Resources Conservation Service


End of May Reservoir Storage
Percent Average
Percent Capacity
200%
180%
160%
140%
120%
100%
80%
60%
40%
20%
0%
ANTERO RESERVOIR
BARR LAKE
BLACK HOLLOW...
BOYD LAKE
CACHE LA POUDRE
CARTER LAKE
CHAMBERS LAKE
CHEESMAN LAKE
COBB LAKE
ELEVENMILE...
EMPIRE RESERVOIR
FOSSIL CREEK...
GROSS RESERVOIR
HALLIGAN RESERVOIR
HORSECREEK...
HORSETOOTH...
JACKSON LAKE...
JULESBURG...
LAKE LOVELAND...
LONE TREE...
MARIANO RESERVOIR
MARSHALL...
MARSTON RESERVOIR
MILTON RESERVOIR
POINT OF ROCKS...
PREWITT RESERVOIR
RIVERSIDE RESERVOIR
SPINNEY MOUNTAIN...
STANDLEY RESERVOIR
TERRY RESERVOIR
UNION RESERVOIR
WINDSOR RESERVOIR
BASINWIDE

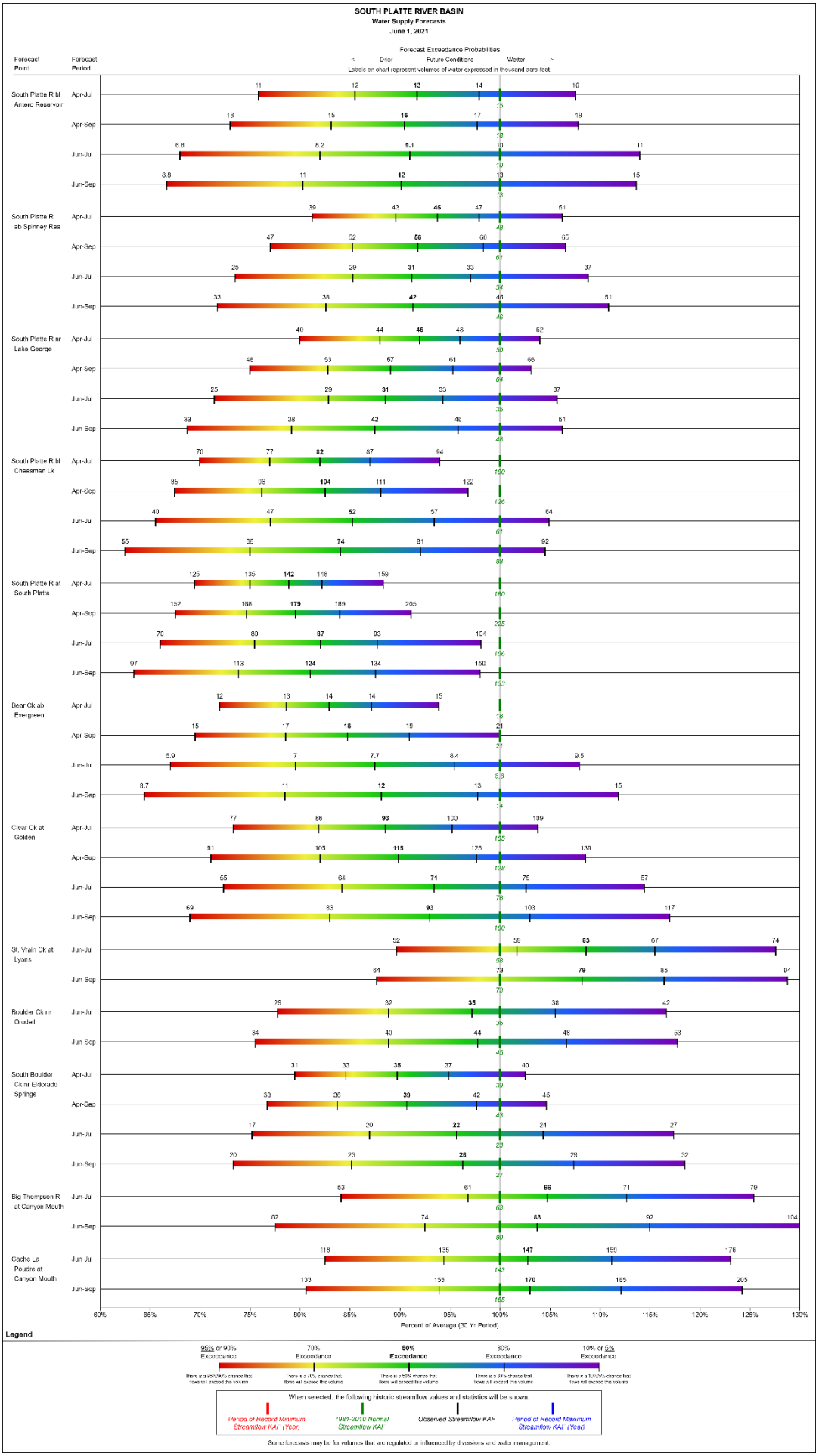
Watershed Snowpack Analysis June 1st, 2021

Sub-Basin	# of Sites	% Median	Last Year % Median
Big Thompson	3	165	32
Boulder Creek	3	234	96
Cache La Poudre	2	86	36
Clear Creek	2	97	60
Saint Vrain	1		
Upper South Platte	6	4725	825
Basin-Wide Total	17	159	54

*SWE values calculated using first of month SNOTEL data and snow course measurements

Reservoir Storage End of May 2021

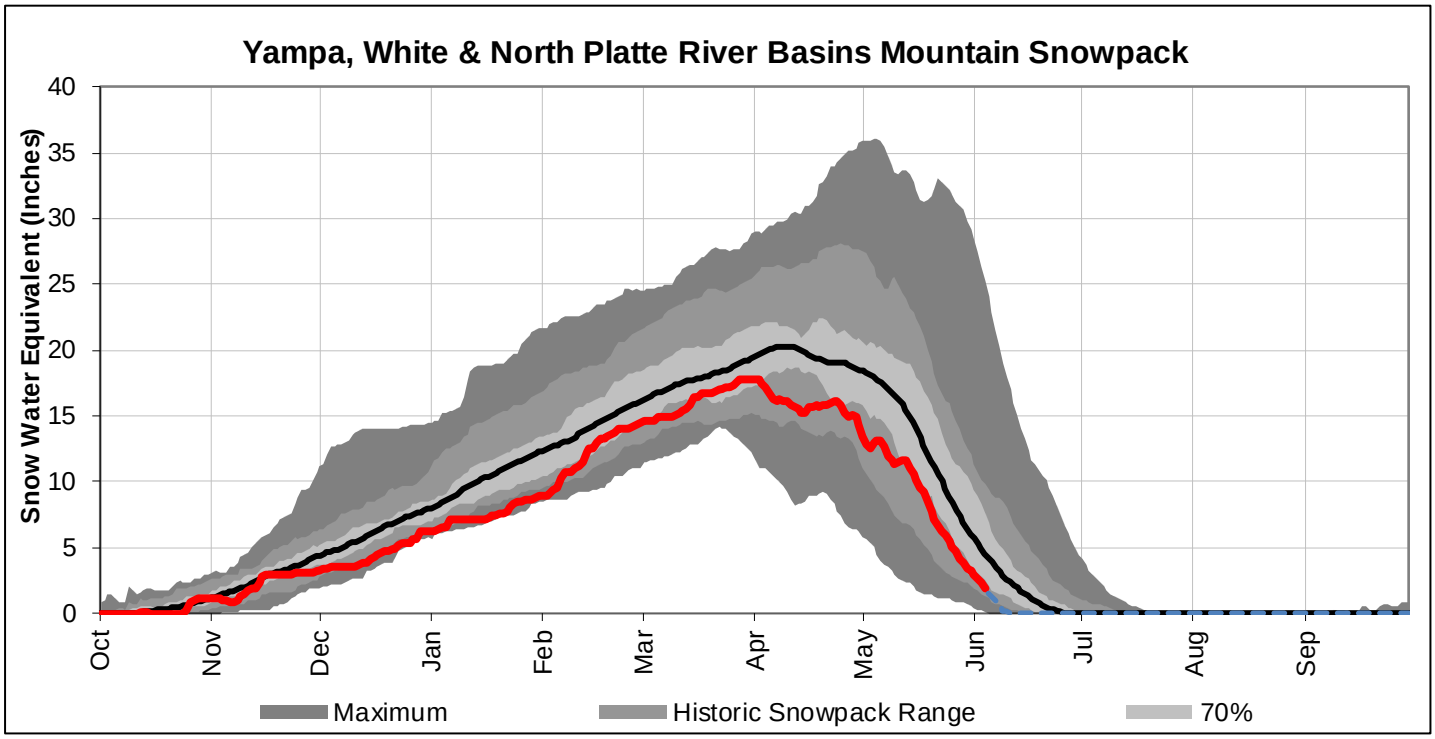
Reservoir	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
ANTERO RESERVOIR	20.1	20.0	15.2	19.9
BARR LAKE	29.9	24.1	28.2	30.1
BLACK HOLLOW RESERVOIR	5.6	5.8	3.6	6.5
BOYD LAKE	47.3	38.6	35.4	48.4
CACHE LA POUDRE	10.6	10.6	8.8	10.1
CARTER LAKE	99.4	98.5	95.2	108.9
CHAMBERS LAKE	8.0	8.1	5.5	8.8
CHEESMAN LAKE	65.9	46.5	70.3	79.0
COBB LAKE	21.9	18.7	12.6	22.3
ELEVENMILE CANYON RESERVOIR	97.0	99.6	97.3	98.0
EMPIRE RESERVOIR	32.6	27.8	29.4	36.5
FOSSIL CREEK RESERVOIR	10.2	9.2	8.3	11.1
GROSS RESERVOIR	17.3	25.9	17.6	29.8
HALLIGAN RESERVOIR	6.4	6.4	6.0	6.4
HORSECREEK RESERVOIR	12.3	9.2	12.9	14.7
HORSETOOTH RESERVOIR	146.6	146.6	114.2	149.7
JACKSON LAKE RESERVOIR	26.1	25.3	26.1	26.1
JULESBURG RESERVOIR	20.4	19.4	19.0	20.5
LAKE LOVELAND RESERVOIR	10.1	9.6	8.5	10.3
LONE TREE RESERVOIR	8.6	8.6	8.1	8.7
MARIANO RESERVOIR	5.1	5.1	4.7	5.4
MARSHALL RESERVOIR	9.2	9.1	8.8	10.0
MARSTON RESERVOIR	11.3	8.0	9.7	13.0
MILTON RESERVOIR	23.6	21.2	19.8	23.5
POINT OF ROCKS RESERVOIR	71.2	61.4	63.2	70.6
PREWITT RESERVOIR	24.9	22.3	22.0	28.2
RIVERSIDE RESERVOIR	55.6	46.4	48.5	55.8
SPINNEY MOUNTAIN RESERVOIR	35.9	45.1	33.1	49.0
STANDLEY RESERVOIR	39.8	42.2	39.1	42.0
TERRY RESERVOIR	8.0	7.9	4.9	8.0
UNION RESERVOIR	11.3	12.5	11.7	13.0
WINDSOR RESERVOIR	0.5	14.2	12.5	15.2
BASINWIDE	992.7	953.8	900.2	1079.5
Number of Reservoirs	32	32	32	32


SOUTH PLATTE RIVER BASIN
Water Supply Forecasts
June 1, 2021
Forecast Exceedance Probabilities
<------ Drier ------- Future Conditions ------- Wetter ------>
Labels on chart represent volumes of water expressed in thousand acre-feet.
Forecast Point
Forecast Period
South Platte R bl Antero Reservoir
Apr-Jul 11 12 13 14 16 15
Apr-Sep 13 15 16 17 19 18
Jun-Jul 9.8 8.2 9.1 10 11 10
Jun-Sep 8.8 11 12 13 15 13
South Platte R ab Spinney Res
Apr-Jul 39 43 45 47 51 48
Apr-Sep 47 52 56 60 65 61
Jun-Jul 25 29 31 33 37 34
Jun-Sep 33 38 42 46 51 46
South Platte R nr Lake George
Apr-Jul 40 44 46 48 52 50
Apr-Sep 48 53 57 61 66 64
Jun-Jul 25 29 31 33 37 35
Jun-Sep 33 38 42 46 51 48
South Platte R bl Cheesman Lk
Apr-Jul 70 77 82 87 94 100
Apr-Sep 85 96 104 111 122 126
Jun-Jul 40 47 52 57 64 61
Jun-Sep 55 66 74 81 92 88
South Platte R at South Platte
Apr-Jul 125 135 142 148 159 180
Apr-Sep 152 168 179 189 205 225
Jun-Jul 70 80 87 93 104 106
Jun-Sep 97 113 124 134 150 153
Bear Ck ab Evergreen
Apr Jul 12 13 14 14 15 16
Apr-Sep 15 17 18 19 21 21
Jun-Jul 5.9 7 7.7 8.4 9.5 8.8
Jun-Sep 8.7 11 12 13 15 14
Clear Ck at Golden
Apr-Jul 77 88 93 100 109 105
Apr-Sep 91 105 115 125 139 138
Jun-Jul 55 64 71 78 87 76
Jun-Sep 69 83 93 103 117 100
St. Vrain Ck at Lyons
Jun-Jul 52 59 63 67 74 58
Jun-Sep 64 79 79 85 94 78
Boulder Ck nr Orodell
Jun-Jul 28 32 35 38 42 36
Jun Sep 34 40 44 48 53 45
South Boulder Ck nr Eldorado Springs
Apr-Jul 31 33 35 37 40 39
Apr-Sep 33 36 39 42 45 43
Jun-Jul 17 20 22 24 27 23
Jun Sep 20 23 26 29 32 27
Big Thompson R at Canyon Mouth
Jun-Jul 53 61 66 71 79 68
Jun-Sep 62 74 83 92 104 80
Cache La Poudre at Canyon Mouth
Jun Jul 118 135 147 159 176 143
Jun-Sep 133 155 170 185 205 165
60% 65% 70% 75% 80% 85% 90% 95% 100% 105% 110% 115% 120% 125% 130%
Percent of Average (30 Yr Period)
Legend
90% or 95% Exceedance
There is a 95%/90% chance that flows will exceed this volume
70% Exceedance
There is a 70% chance that flows will exceed this volume
50% Exceedance
There is a 50% chance that flows will exceed this volume
30% Exceedance
There is a 30% chance that flows will exceed this volume
10% or 5% Exceedance
There is a 10%/5% chance that flows will exceed this volume
When selected, the following historic streamflow values and statistics will be shown.
Period of Record Minimum Streamflow KAF (Year)
1981-2010 Normal Streamflow KAF
Observed Streamflow KAF
Period of Record Maximum Streamflow KAF (Year)
Some forecasts may be for volumes that are regulated or influenced by diversions and/or water management.

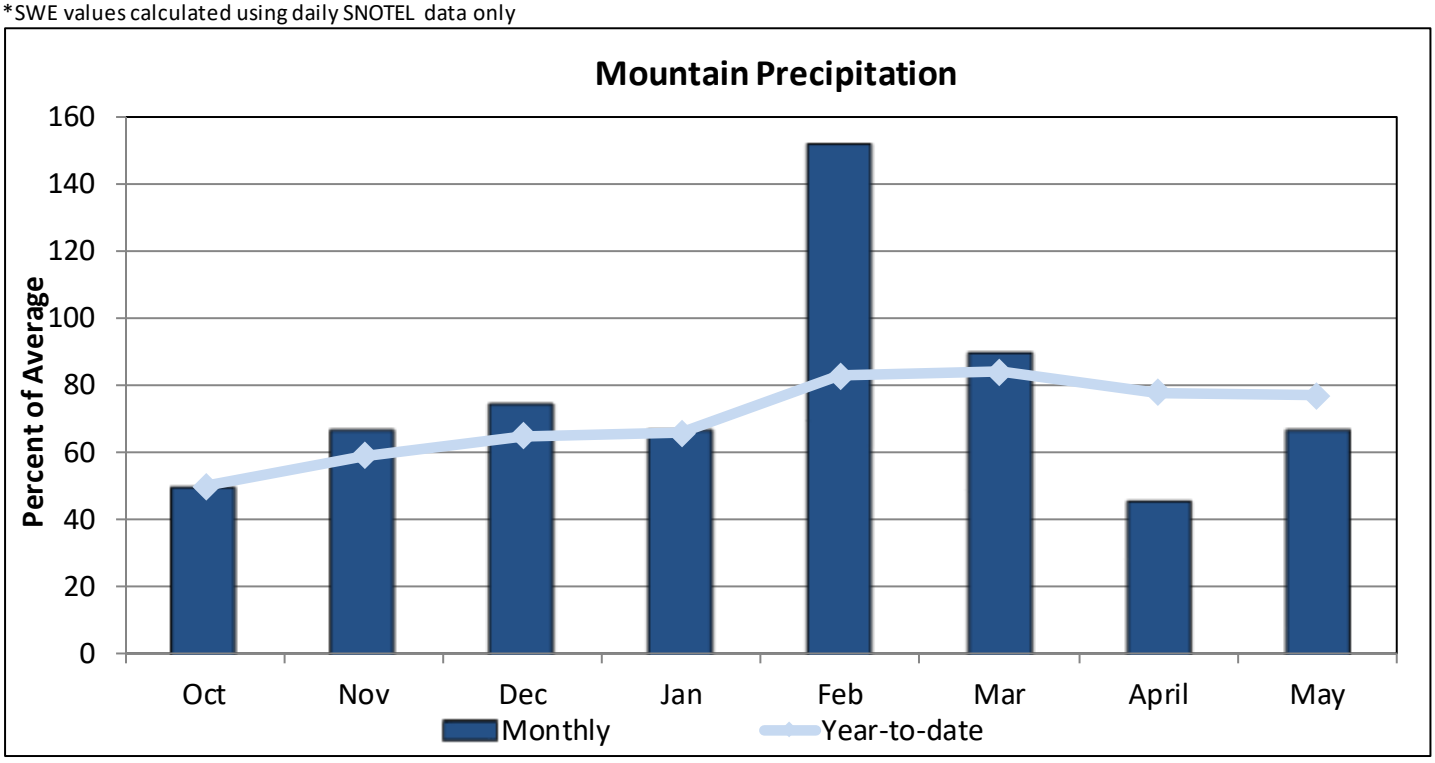
YAMPA, WHITE, NORTH PLATTE, AND LARAMIE RIVER BASINS

June 1, 2021

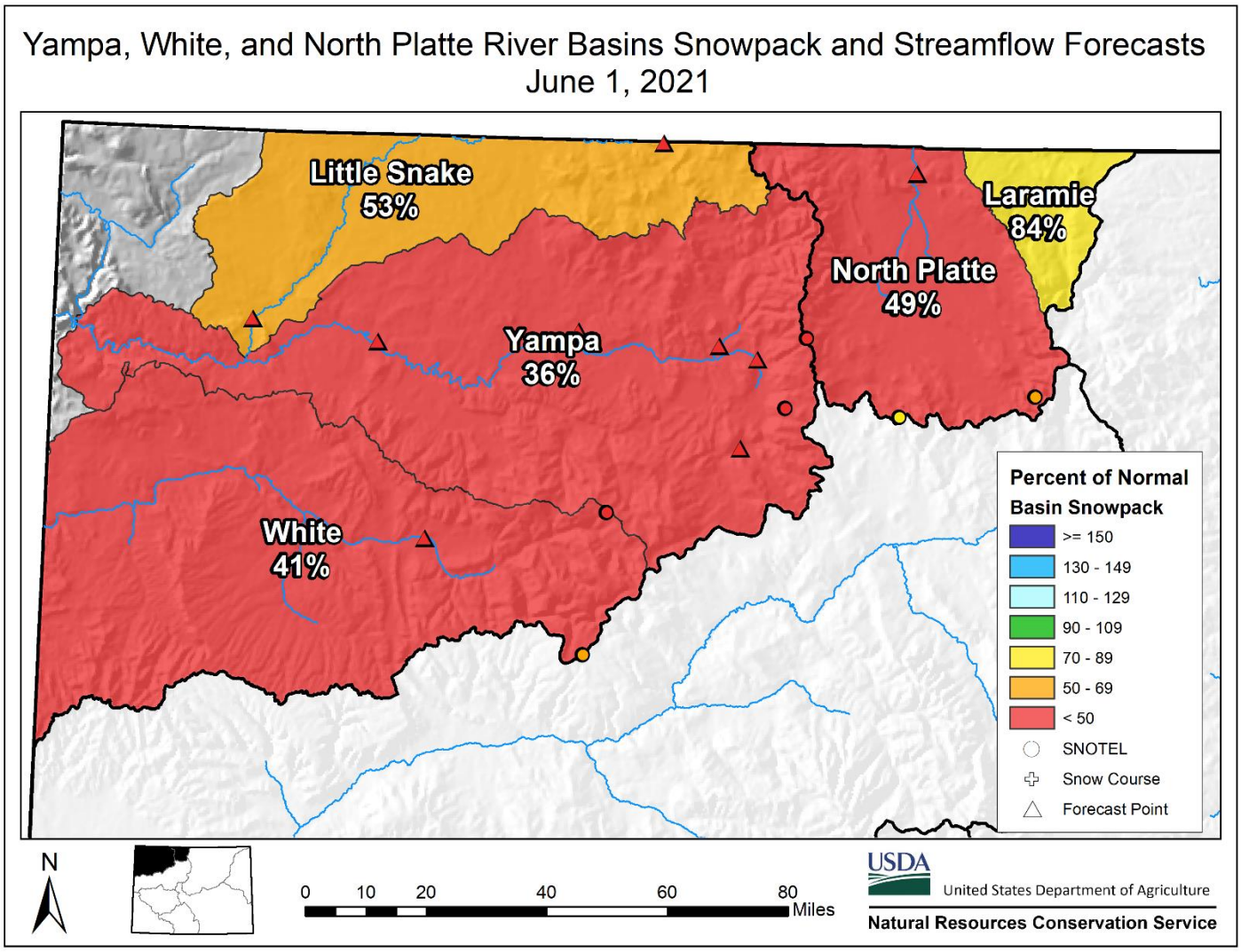
Snowpack in the Yampa, White & North Platte basins is below normal at 51% of the median. Precipitation for May was 67% of average and water year-to-date precipitation is 77% of average. Reservoir storage at the end of May was 107% of average compared to 115% last year. Current June - July streamflow forecasts range from 80% of average on the Laramie River near Woods to 5% of average on Elkhead Creek above Long Gulch.

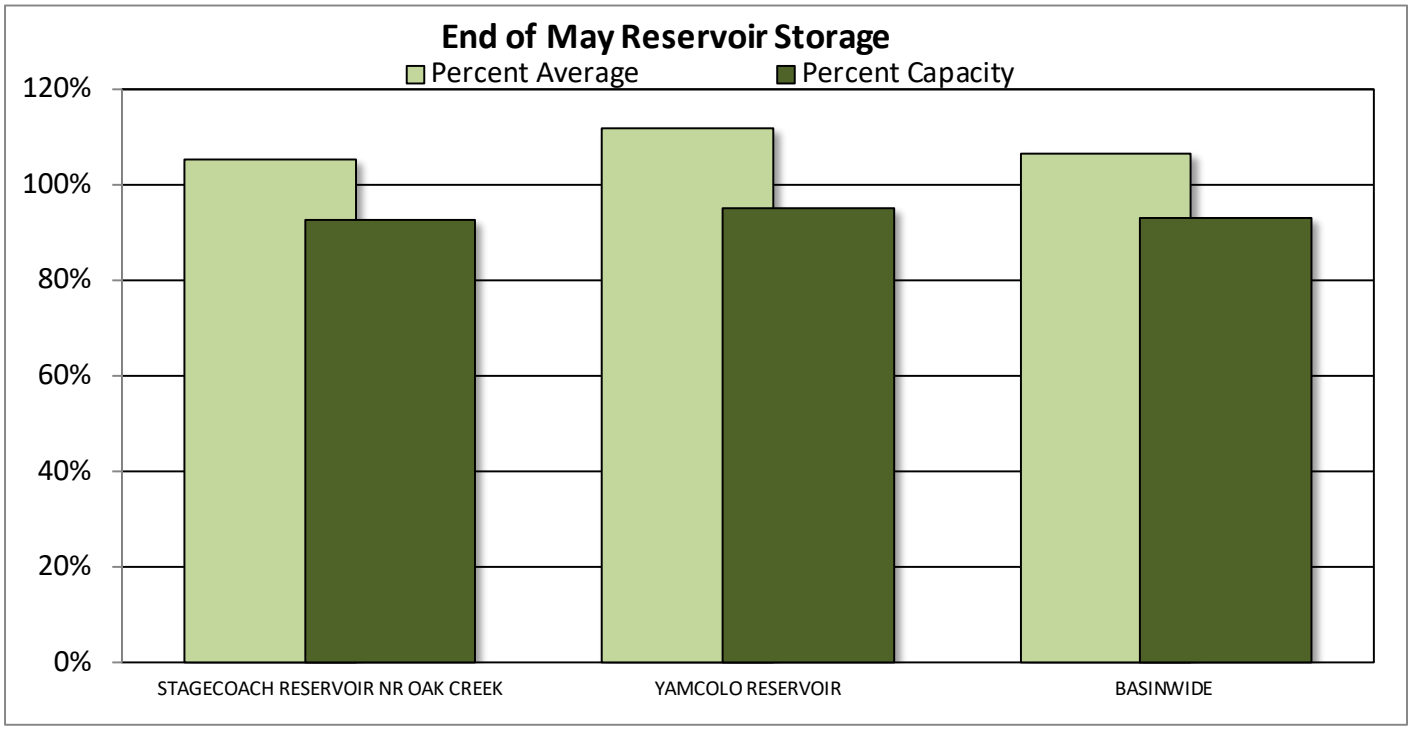


*SWE values calculated using daily SNOTEL data only



*SWE values calculated using first of month SNOTEL data and snow course measurements


Yampa, White, and North Platte River Basins Snowpack and Streamflow Forecasts
June 1, 2021
Little Snake
53%
Laramie
84%
North Platte
49%
Yampa
36%
White
41%
Percent of Normal
Basin Snowpack
>= 150
130 - 149
110 - 129
90 - 109
70 - 89
50 - 69
< 50
SNOTEL
Snow Course
Forecast Point
N
0 10 20 40 60 80
Miles
USDA
United States Department of Agriculture
Natural Resources Conservation Service


End of May Reservoir Storage
Percent Average
Percent Capacity
120%
100%
80%
60%
40%
20%
0%
STAGECOACH RESERVOIR NR OAK CREEK
YAMCOLO RESERVOIR
BASINWIDE

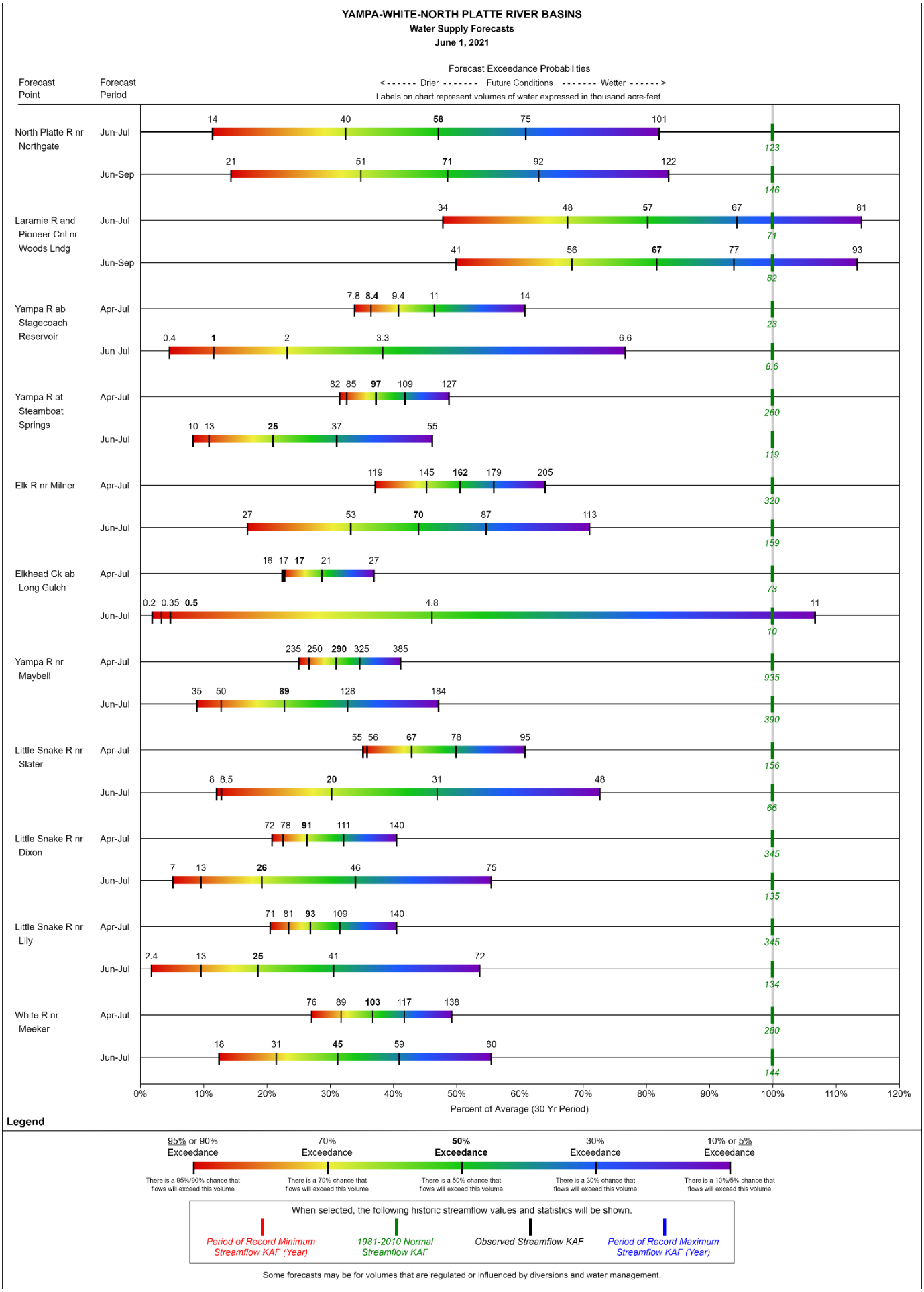
Watershed Snowpack Analysis June 1st, 2021

Sub-Basin	# of Sites	% Median	Last Year % Median
Laramie	2	84	3
North Platte	8	49	76
Total Laramie & North Platte	10	53	66
Elk	2		
Yampa	9	36	84
White	3	41	65
Total Yampa & White	11	41	74
Little Snake	7	53	72
Basin-Wide Total	25	51	68

*SWE values calculated using first of month SNOTEL data and snow course measurements

Reservoir Storage End of May 2021

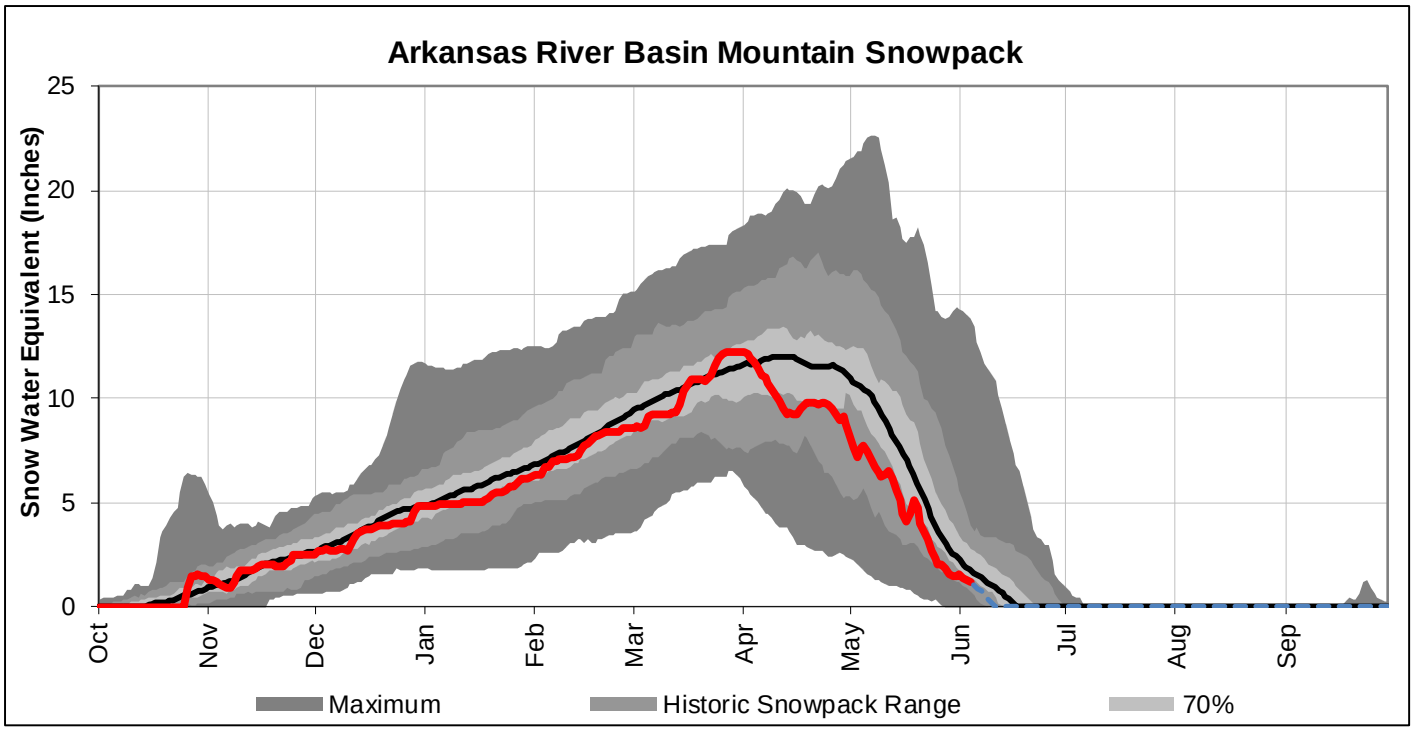
Reservoir	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
STAGECOACH RESERVOIR NR OAK CREEK	33.8	35.8	32.1	36.5
YAMCOLO RESERVOIR	8.3	9.8	7.4	8.7
BASINWIDE	42.1	45.6	39.5	45.2
Number of Reservoirs	2	2	2	2


YAMPA-WHITE-NORTH PLATTE RIVER BASINS
Water Supply Forecasts
June 1, 2021
Forecast Exceedance Probabilities
< ------- Drier ------- Future Conditions ------- Wetter ------- >
Labels on chart represent volumes of water expressed in thousand acre-feet.
Forecast Point
Forecast Period
North Platte R nr Northgate
Jun-Jul 14 40 58 75 101 123
Jun-Sep 21 51 71 92 122 146
Laramie R and Pioneer Cnl nr Woods Lndg
Jun-Jul 34 48 57 67 81 71
Jun-Sep 41 56 67 77 93 82
Yampa R ab Stagecoach Reservoir
Apr-Jul 7.8 8.4 9.4 11 14 23
Jun-Jul 0.4 1 2 3.3 6.6 8.6
Yampa R at Steamboat Springs
Apr-Jul 82 85 97 109 127 260
Jun-Jul 10 13 25 37 55 119
Elk R nr Milner
Apr-Jul 119 145 162 179 205 320
Jun-Jul 27 53 70 87 113 159
Elkhead Ck ab Long Gulch
Apr-Jul 16 17 17 21 27 73
Jun-Jul 0.2 0.35 0.5 4.8 11 10
Yampa R nr Maybell
Apr-Jul 235 250 290 325 385 935
Jun-Jul 35 50 89 128 184 390
Little Snake R nr Slater
Apr-Jul 55 56 67 78 95 156
Jun-Jul 8 8.5 20 31 48 66
Little Snake R nr Dixon
Apr-Jul 72 78 91 111 140 345
Jun-Jul 7 13 26 46 75 135
Little Snake R nr Lily
Apr-Jul 71 81 93 109 140 345
Jun-Jul 2.4 13 25 41 72 134
White R nr Meeker
Apr-Jul 76 89 103 117 138 280
Jun-Jul 18 31 45 59 80 144
0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100% 110% 120%
Percent of Average (30 Yr Period)
Legend
95% or 90% Exceedance
There is a 95%/90% chance that flows will exceed this volume
70% Exceedance
There is a 70% chance that flows will exceed this volume
50% Exceedance
There is a 50% chance that flows will exceed this volume
30% Exceedance
There is a 30% chance that flows will exceed this volume
10% or 5% Exceedance
There is a 10%/5% chance that flows will exceed this volume
When selected, the following historic streamflow values and statistics will be shown.
Period of Record Minimum Streamflow KAF (Year)
1981-2010 Normal Streamflow KAF
Observed Streamflow KAF
Period of Record Maximum Streamflow KAF (Year)
Some forecasts may be for volumes that are regulated or influenced by diversions and water management.

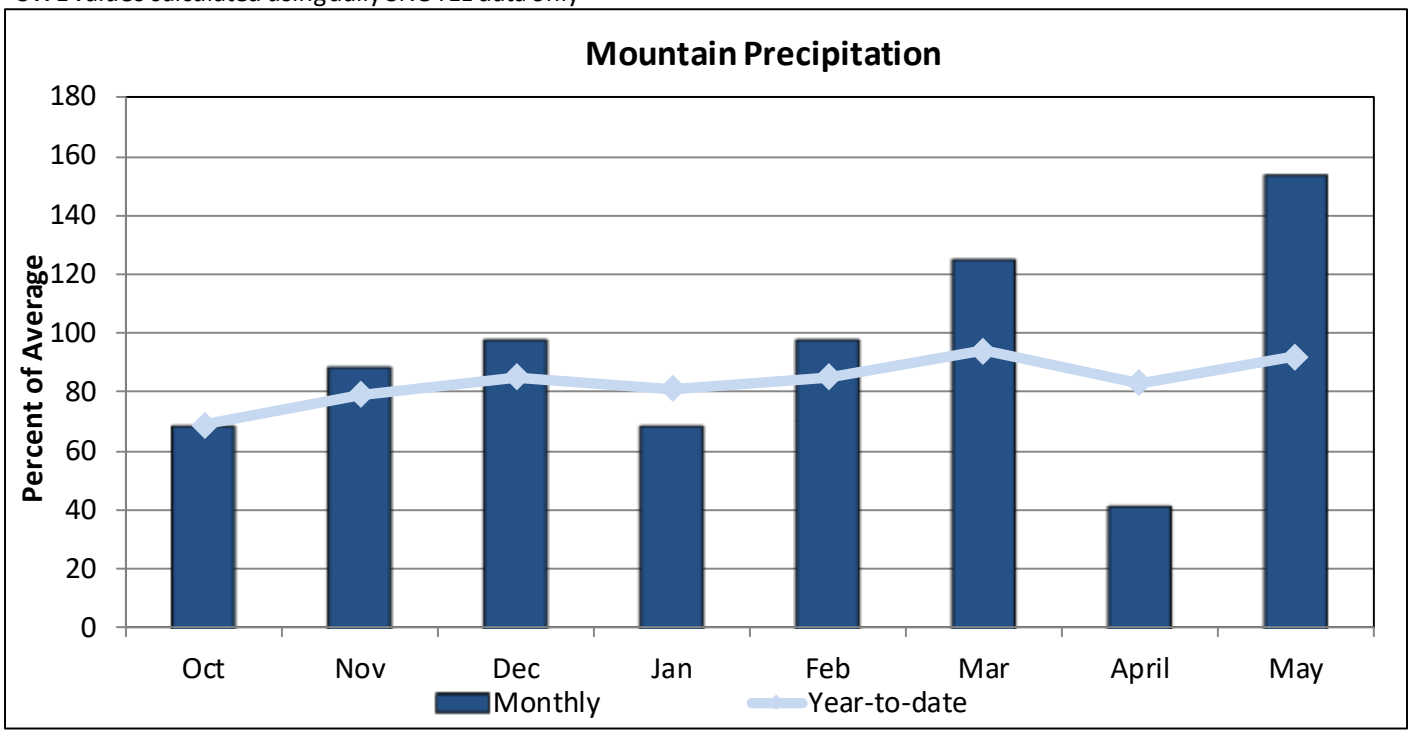
ARKANSAS RIVER BASIN

June 1, 2021

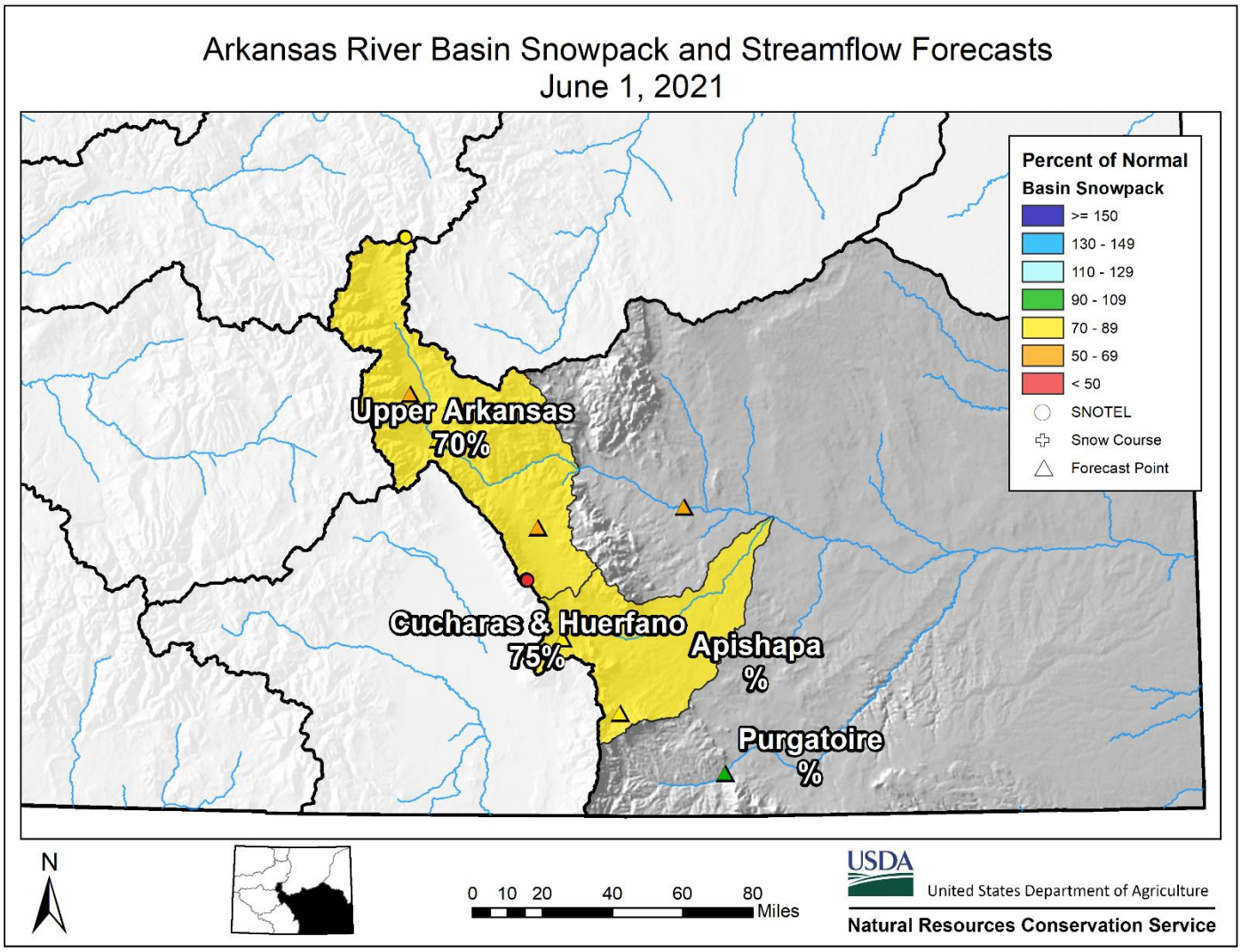
Snowpack in the Arkansas river basin is below normal at 71% of median. Precipitation for May was 154% of average which brings water year-to-date precipitation to 92% of average. Reservoir storage at the end of May was 74% of average compared to 87% last year. Current June – July streamflow forecasts range from 92% of average on the Cucharas River near La Veta to 51% of average on the Chalk Creek near Nathrop.

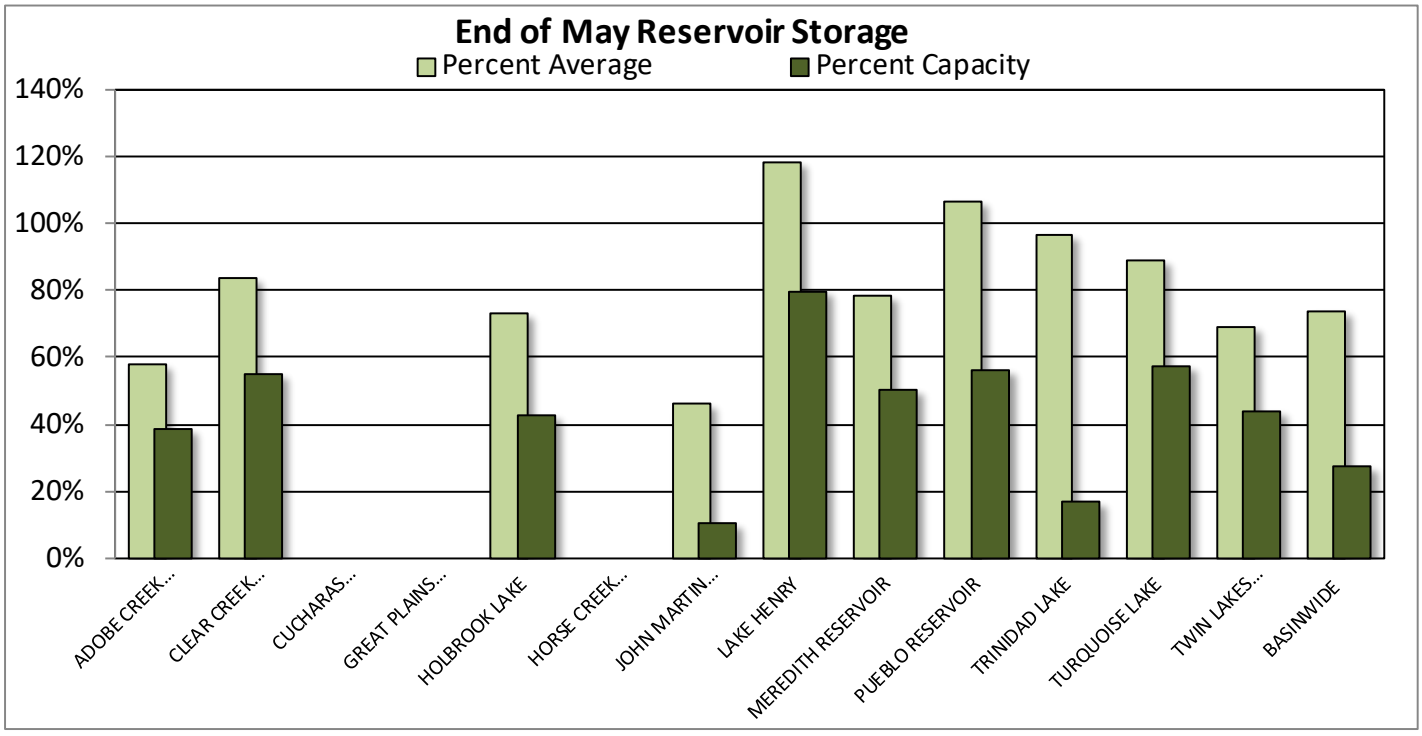


*SWE values calculated using daily SNOTEL data only



*SWE values calculated using first of month SNOTEL data and snow course measurements


Arkansas River Basin Snowpack and Streamflow Forecasts
June 1, 2021
Percent of Normal
Basin Snowpack
>= 150
130 - 149
110 - 129
90 - 109
70 - 89
50 - 69
< 50
SNOTEL
Snow Course
Forecast Point
Upper Arkansas
70%
Cucharas & Huerfano
75%
Apishapa
%
Purgatoire
%
N
0 10 20 40 60 80
Miles
USDA
United States Department of Agriculture
Natural Resources Conservation Service


End of May Reservoir Storage
Percent Average
Percent Capacity
140%
120%
100%
80%
60%
40%
20%
0%
ADOBE CREEK...
CLEAR CREEK...
CUCHARAS...
GREAT PLAINS...
HOLBROOK LAKE
HORSE CREEK...
JOHN MARTIN...
LAKE HENRY
MEREDITH RESERVOIR
PUEBLO RESERVOIR
TRINIDAD LAKE
TURQUOISE LAKE
TWIN LAKES...
BASINWIDE

Watershed Snowpack Analysis June 1st, 2021

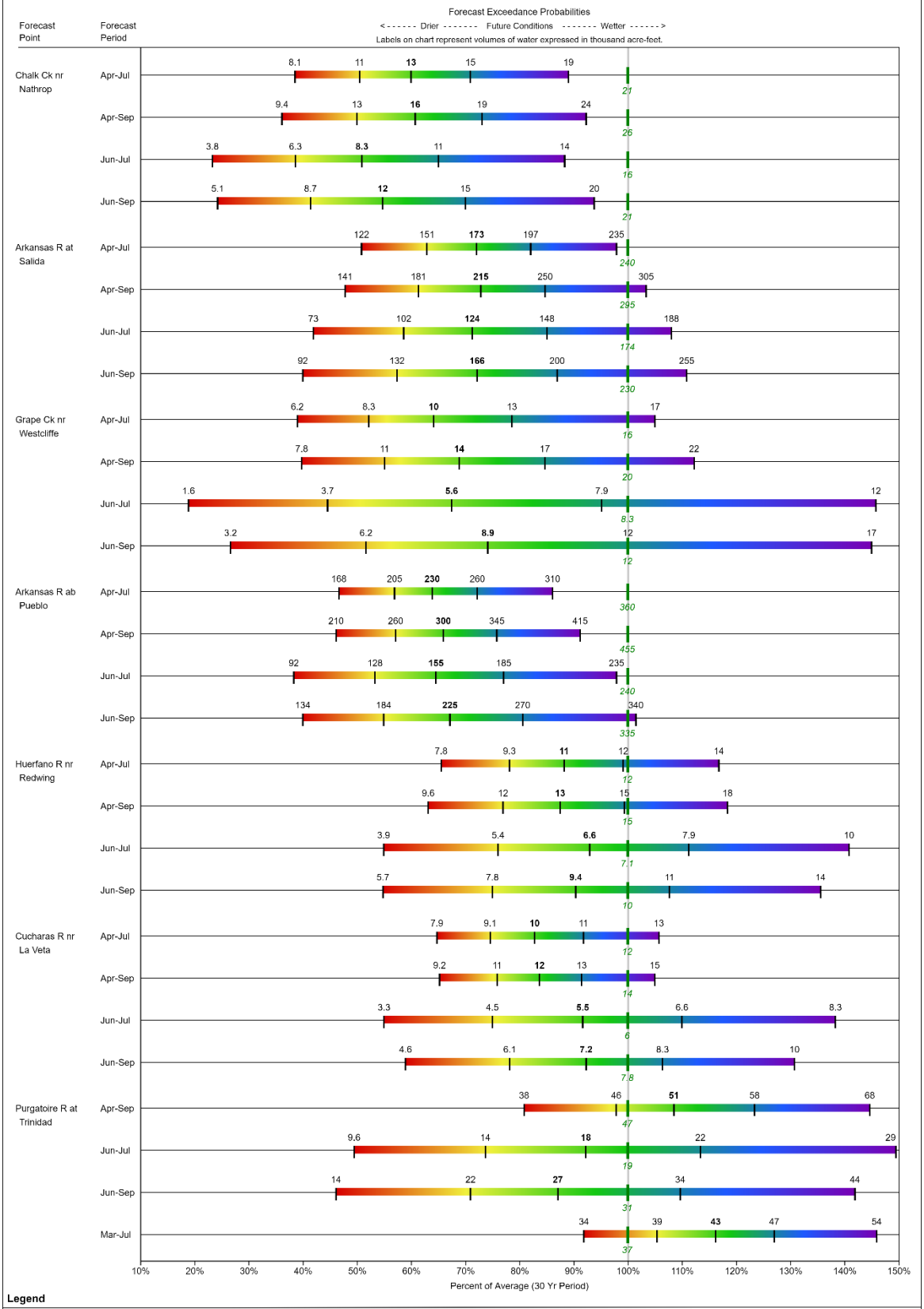
Sub-Basin	# of Sites	% Median	Last Year % Median
Upper Arkansas	3	70	84
Cucharas & Huerfano	3	75	
Purgatoire	2		
Basin-Wide Total	8	71	75

*SWE values calculated using first of month SNOTEL data and snow course measurements

Reservoir Storage End of May 2021

Reservoir	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
ADOBE CREEK RESERVOIR	23.9	32.8	41.4	62.0
CLEAR CREEK RESERVOIR	6.3	8.0	7.5	11.4
CUCHARAS RESERVOIR				40.0
GREAT PLAINS RESERVOIR				150.0
HOLBROOK LAKE	3.0	1.6	4.1	7.0
HORSE CREEK RESERVOIR	0.0	0.3	9.9	27.0
JOHN MARTIN RESERVOIR	65.3	90.0	141.9	616.0
LAKE HENRY	7.5	3.2	6.3	9.4
MEREDITH RESERVOIR	21.1	29.6	26.8	42.0
PUEBLO RESERVOIR	198.6	234.6	186.4	354.0
TRINIDAD LAKE	28.3	21.6	29.3	167.0
TURQUOISE LAKE	73.1	80.2	82.3	127.0
TWIN LAKES RESERVOIR	37.9	44.5	54.9	86.0
BASINWIDE	464.9	546.3	590.8	1698.8
Number of Reservoirs	11	11	11	13

ARKANSAS RIVER BASIN
Water Supply Forecasts
June 1, 2021



Legend

95% or 90% Exceedance — There is a 95%/90% chance that flows will exceed this volume
70% Exceedance — There is a 70% chance that flows will exceed this volume
50% Exceedance — There is a 50% chance that flows will exceed this volume
30% Exceedance — There is a 30% chance that flows will exceed this volume
10% or 5% Exceedance — There is a 10%/5% chance that flows will exceed this volume

When selected, the following historic streamflow values and statistics will be shown.

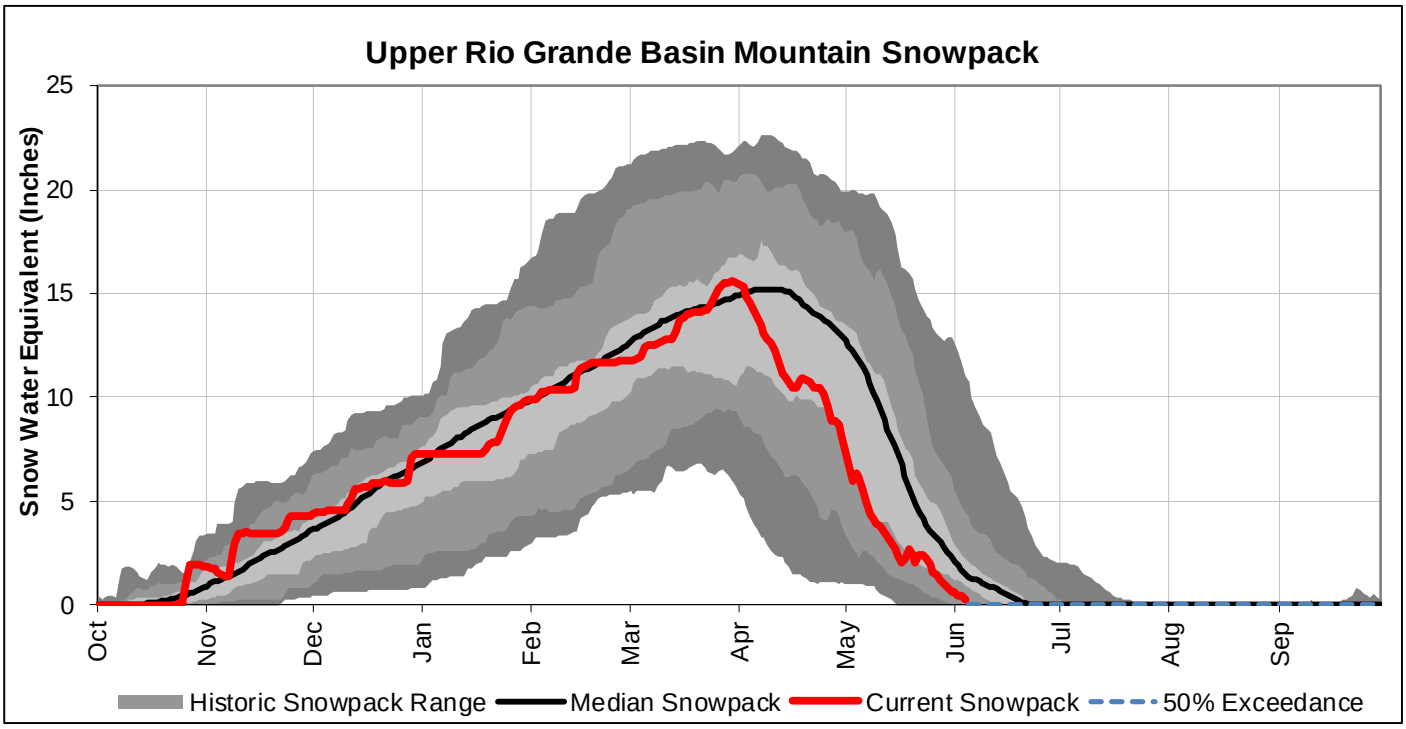
Period of Record Minimum Streamflow KAF (Year)
1981-2010 Normal Streamflow KAF
Observed Streamflow KAF
Period of Record Maximum Streamflow KAF (Year)

Some forecasts may be for volumes that are regulated or influenced by diversions and water management.

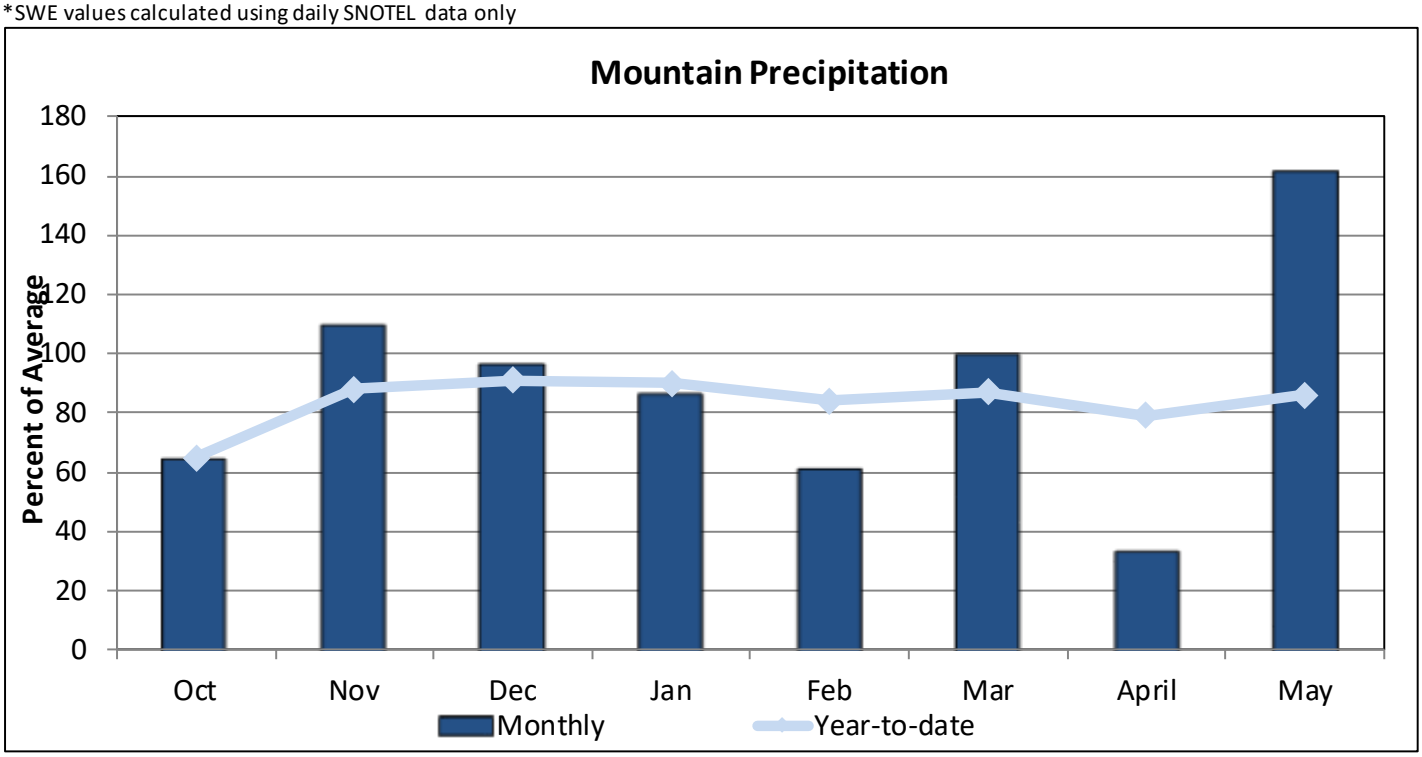
UPPER RIO GRANDE RIVER BASIN

June 1, 2021

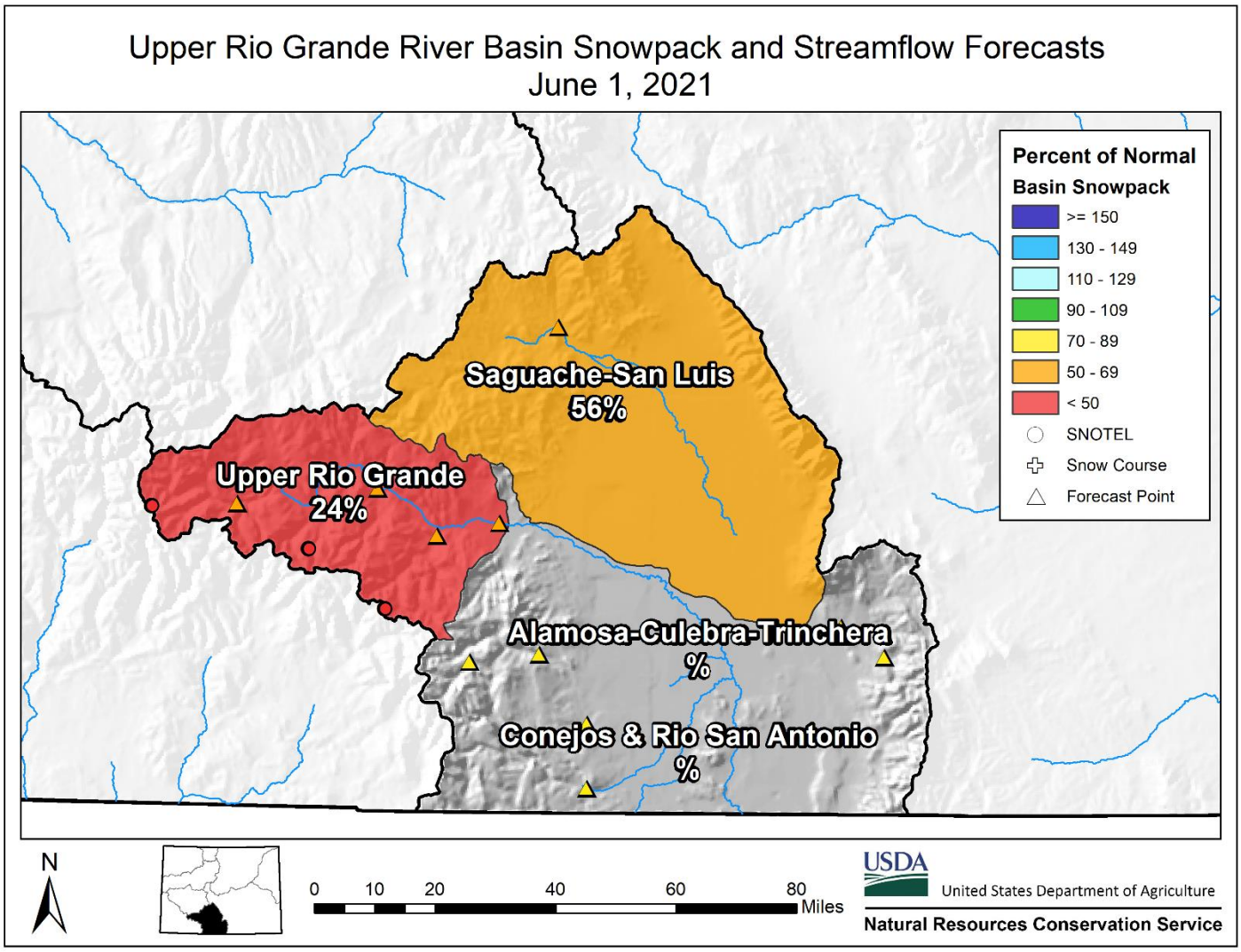
Snowpack in the Upper Rio Grande river basin is below normal at 29% of median. Precipitation for May was 162% of average which brings water year-to-date precipitation to 86% of average. Reservoir storage at the end of May was 67% of average compared to 62% last year. Current June – September streamflow forecasts range from 79% of average for Ute Creek near Fort Garland to 30% of average on the San Antonio River at Ortiz.

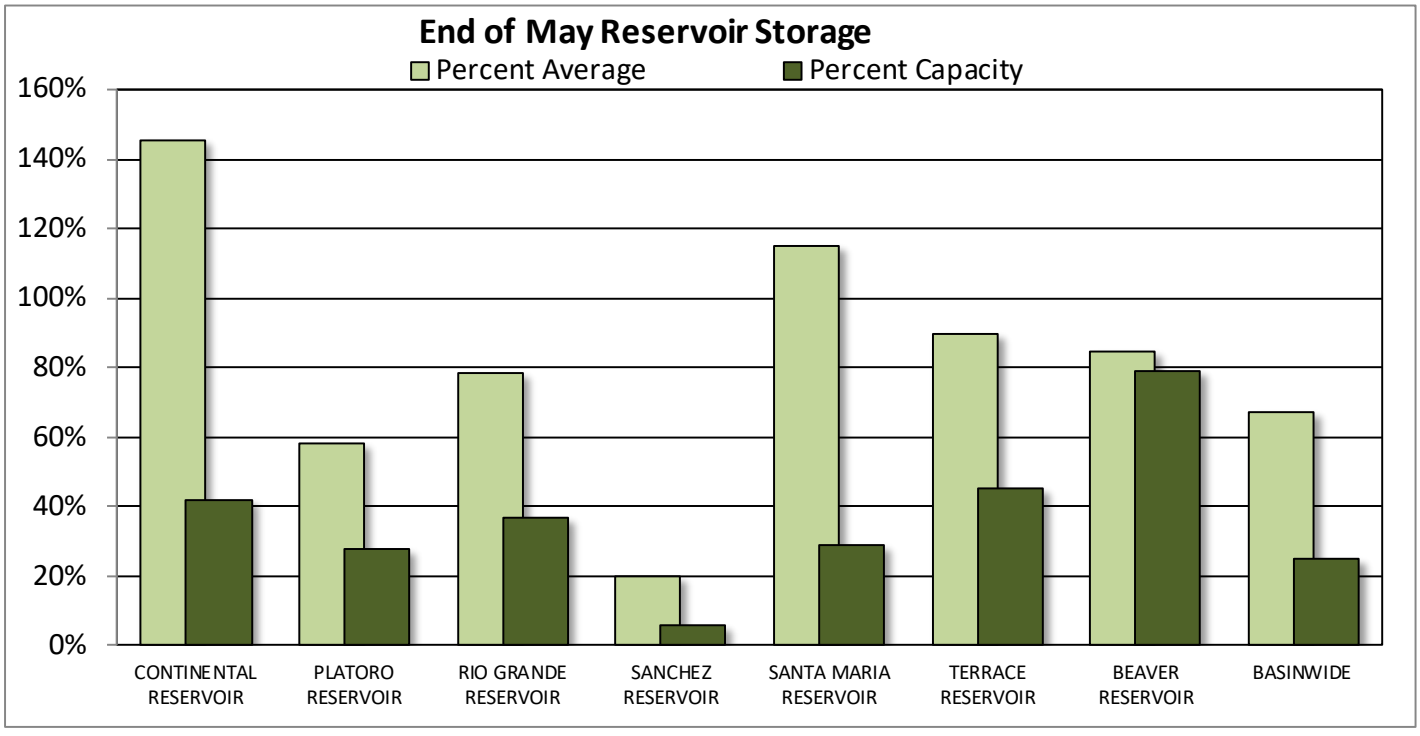


*SWE values calculated using daily SNOTEL data only



*SWE values calculated using first of month SNOTEL data and snow course measurements


Upper Rio Grande River Basin Snowpack and Streamflow Forecasts
June 1, 2021
Percent of Normal
Basin Snowpack
>= 150
130 - 149
110 - 129
90 - 109
70 - 89
50 - 69
< 50
SNOTEL
Snow Course
Forecast Point
Saguache-San Luis
56%
Upper Rio Grande
24%
Alamosa-Culebra-Trinchera
%
Conejos & Rio San Antonio
%
N
0 10 20 40 60 80
Miles
USDA
United States Department of Agriculture
Natural Resources Conservation Service


End of May Reservoir Storage
Percent Average
Percent Capacity
160%
140%
120%
100%
80%
60%
40%
20%
0%
CONTINENTAL RESERVOIR
PLATORO RESERVOIR
RIO GRANDE RESERVOIR
SANCHEZ RESERVOIR
SANTA MARIA RESERVOIR
TERRACE RESERVOIR
BEAVER RESERVOIR
BASINWIDE

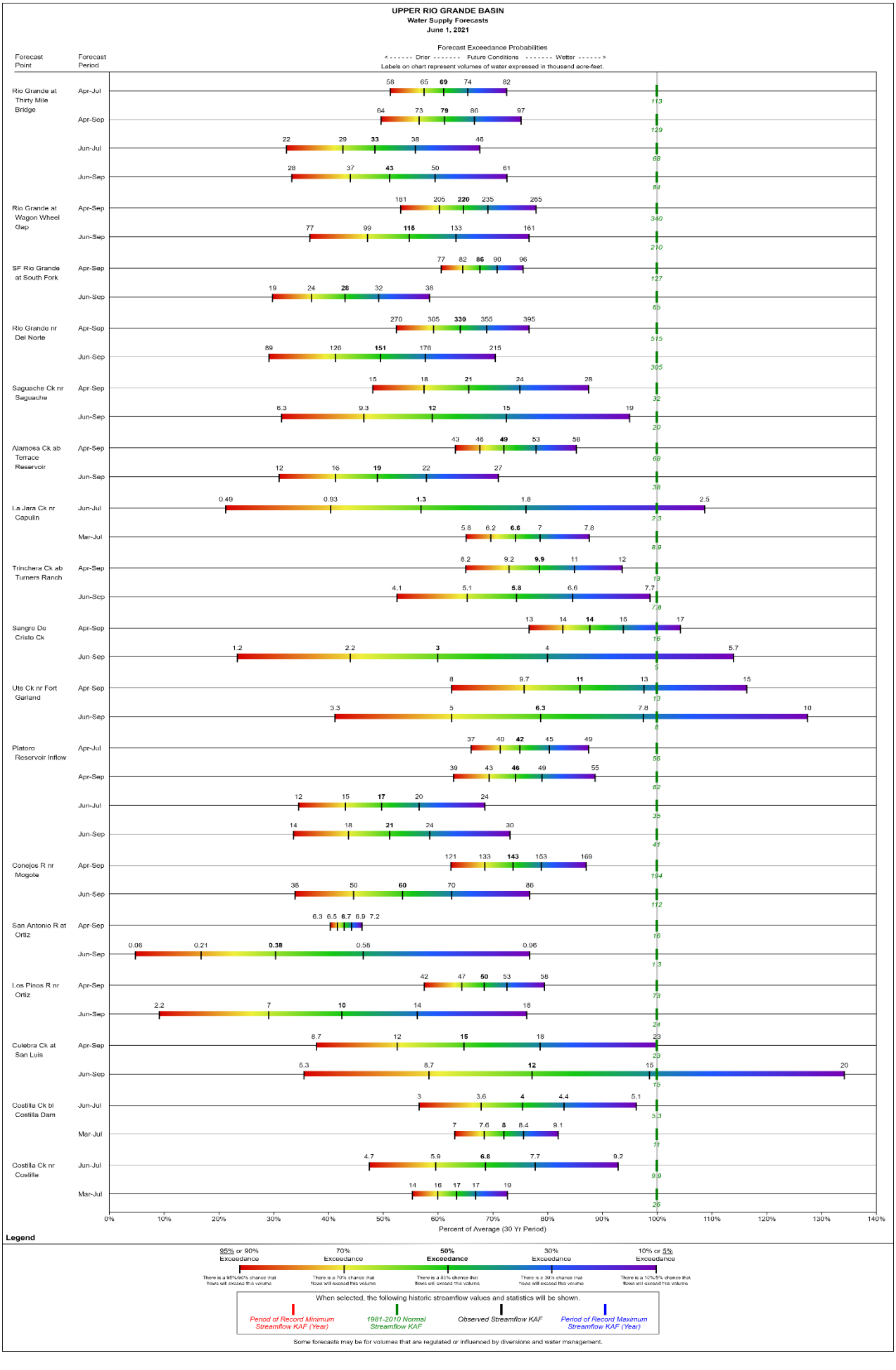
Watershed Snowpack Analysis June 1st, 2021

Sub-Basin	# of Sites	% Median	Last Year % Median
Alamosa Creek	1		
Conejos & Rio San Antonio	2		
Culebra & Trinchera Creek	3		
Upper Rio Grande	5	24	
Basin-Wide Total	11	29	

*SWE values calculated using first of month SNOTEL data and snow course measurements

Reservoir Storage End of May 2021

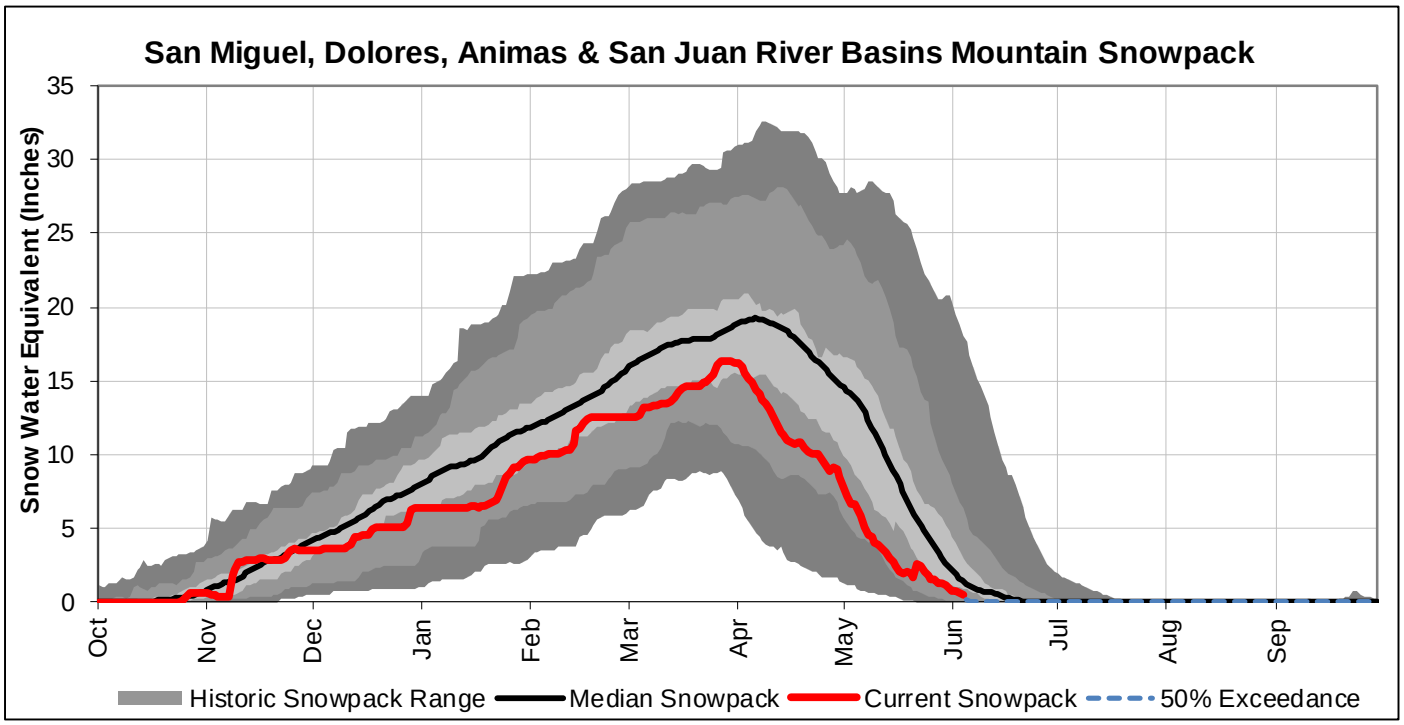
Reservoir	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
CONTINENTAL RESERVOIR	11.2	8.2	7.7	27.0
PLATORO RESERVOIR	16.7	19.4	28.7	60.0
RIO GRANDE RESERVOIR	18.8	8.4	23.9	51.0
SANCHEZ RESERVOIR	6.1	6.6	30.8	103.0
SANTA MARIA RESERVOIR	13.0	16.1	11.3	45.0
TERRACE RESERVOIR	8.1	8.4	9.1	18.0
BEAVER RESERVOIR	3.6	4.5	4.2	4.5
BASINWIDE	77.4	71.7	115.7	308.5
Number of Reservoirs	7	7	7	7


UPPER RIO GRANDE BASIN
Water Supply Forecasts
June 1, 2021
Forecast Exceedance Probabilities
< ------- Drier ------- Future Conditions ------- Wetter ------- >
Labels on chart represent volumes of water expressed in thousand acre-feet.
Forecast Point
Forecast Period
Rio Grande at Thirty Mile Bridge
Apr-Jul 58 65 69 74 82 113
Apr-Sep 64 73 79 86 97 129
Jun-Jul 22 29 33 38 46 68
Jun-Sep 28 37 43 50 61 84
Rio Grande at Wagon Wheel Gap
Apr-Sep 181 205 220 235 265 340
Jun-Sep 77 99 115 133 161 210
SF Rio Grande at South Fork
Apr-Sep 77 82 86 90 96 127
Jun-Sep 19 24 28 32 38 55
Rio Grande nr Del Norte
Apr-Sep 270 305 330 355 395 515
Jun-Sep 89 126 151 176 215 305
Saguache Ck nr Saguache
Apr-Sep 15 18 21 24 28 32
Jun-Sep 6.3 9.3 12 15 19 20
Alamosa Ck ab Terrace Reservoir
Apr-Sep 43 46 49 53 58 68
Jun-Sep 12 16 19 22 27 38
La Jara Ck nr Capulin
Jun-Jul 0.49 0.93 1.3 1.8 2.5 2.3
Mar-Jul 5.8 6.2 6.6 7 7.8 8.9
Trinchera Ck ab Turners Ranch
Apr-Sep 8.2 9.2 9.9 11 12 13
Jun-Sep 4.1 5.1 5.8 6.6 7.7 7.8
Sangre De Cristo Ck
Apr-Sep 13 14 14 15 17 16
Jun-Sep 1.2 2.2 3 4 5.7 5
Ute Ck nr Fort Garland
Apr-Sep 8 9.7 11 13 15 13
Jun-Sep 3.3 5 6.3 7.8 10 8
Platoro Reservoir Inflow
Apr-Jul 37 40 42 45 49 56
Apr-Sep 39 43 46 49 55 62
Jun-Jul 12 15 17 20 24 35
Jun-Sep 14 18 21 24 30 41
Conejos R nr Mogote
Apr-Sep 121 133 143 153 169 194
Jun-Sep 38 50 60 70 86 112
San Antonio R at Ortiz
Apr-Sep 6.3 6.5 6.7 6.9 7.2 16
Jun-Sep 0.06 0.21 0.38 0.58 0.96 1.3
Los Pinos R nr Ortiz
Apr-Sep 42 47 50 53 58 73
Jun-Sep 2.2 7 10 14 18 24
Culebra Ck at San Luis
Apr-Sep 8.7 12 15 18 23 23
Jun-Sep 5.3 8.7 12 15 20 15
Costilla Ck bl Costilla Dam
Jun-Jul 3 3.6 4 4.4 5.1 5.3
Mar-Jul 7 7.6 8 8.4 9.1 11
Costilla Ck nr Costilla
Jun-Jul 4.7 5.9 6.8 7.7 9.2 9.9
Mar-Jul 14 16 17 17 19 26
0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100% 110% 120% 130% 140%
Percent of Average (30 Yr Period)
Legend
95% or 90% Exceedance
There is a 95%/90% chance that flows will exceed this volume
70% Exceedance
There is a 70% chance that flows will exceed this volume
50% Exceedance
There is a 50% chance that flows will exceed this volume
30% Exceedance
There is a 30% chance that flows will exceed this volume
10% or 5% Exceedance
There is a 10%/5% chance that flows will exceed this volume
When selected, the following historic streamflow values and statistics will be shown.
Period of Record Minimum Streamflow KAF (Year)
1981-2010 Normal Streamflow KAF
Observed Streamflow KAF
Period of Record Maximum Streamflow KAF (Year)
Some forecasts may be for volumes that are regulated or influenced by diversions and water management.

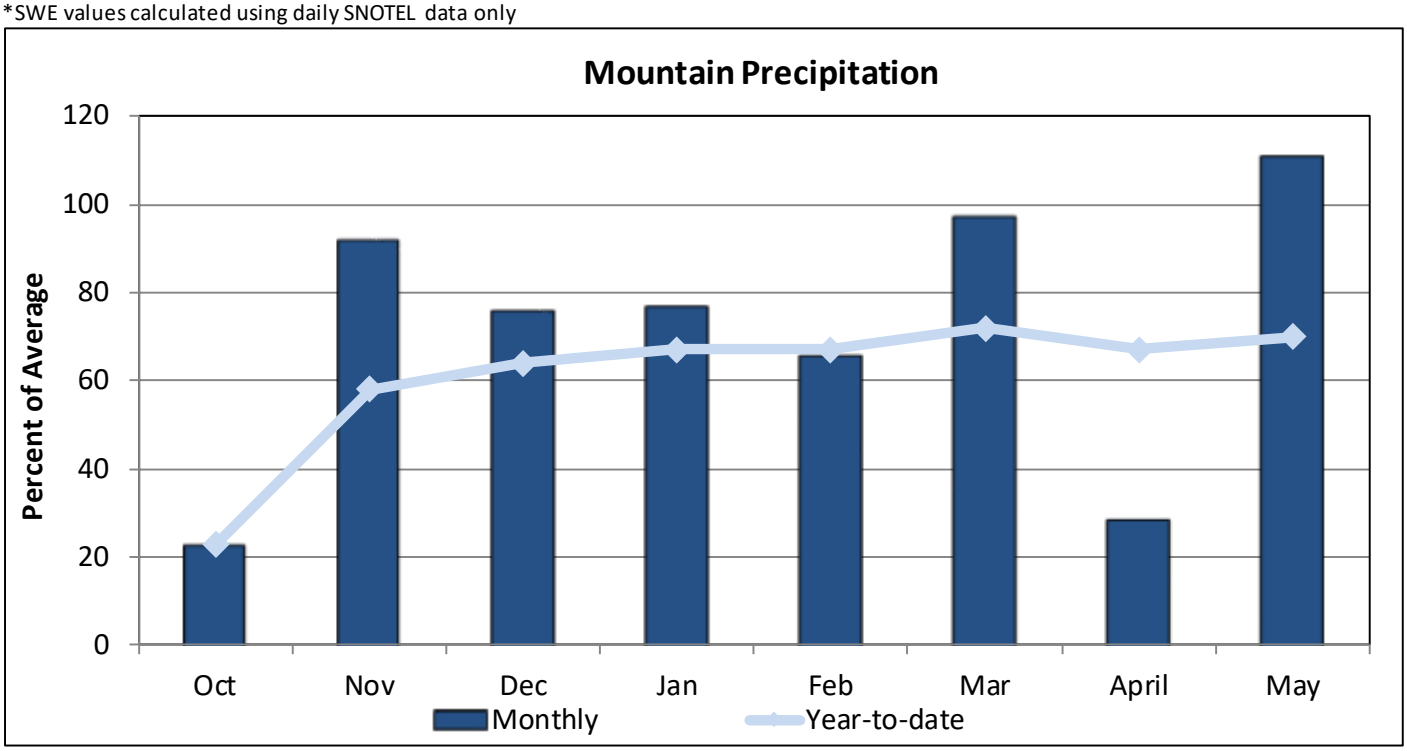
SAN MIGUEL, DOLORES, ANIMAS, AND SAN JUAN RIVER BASINS

June 1, 2021

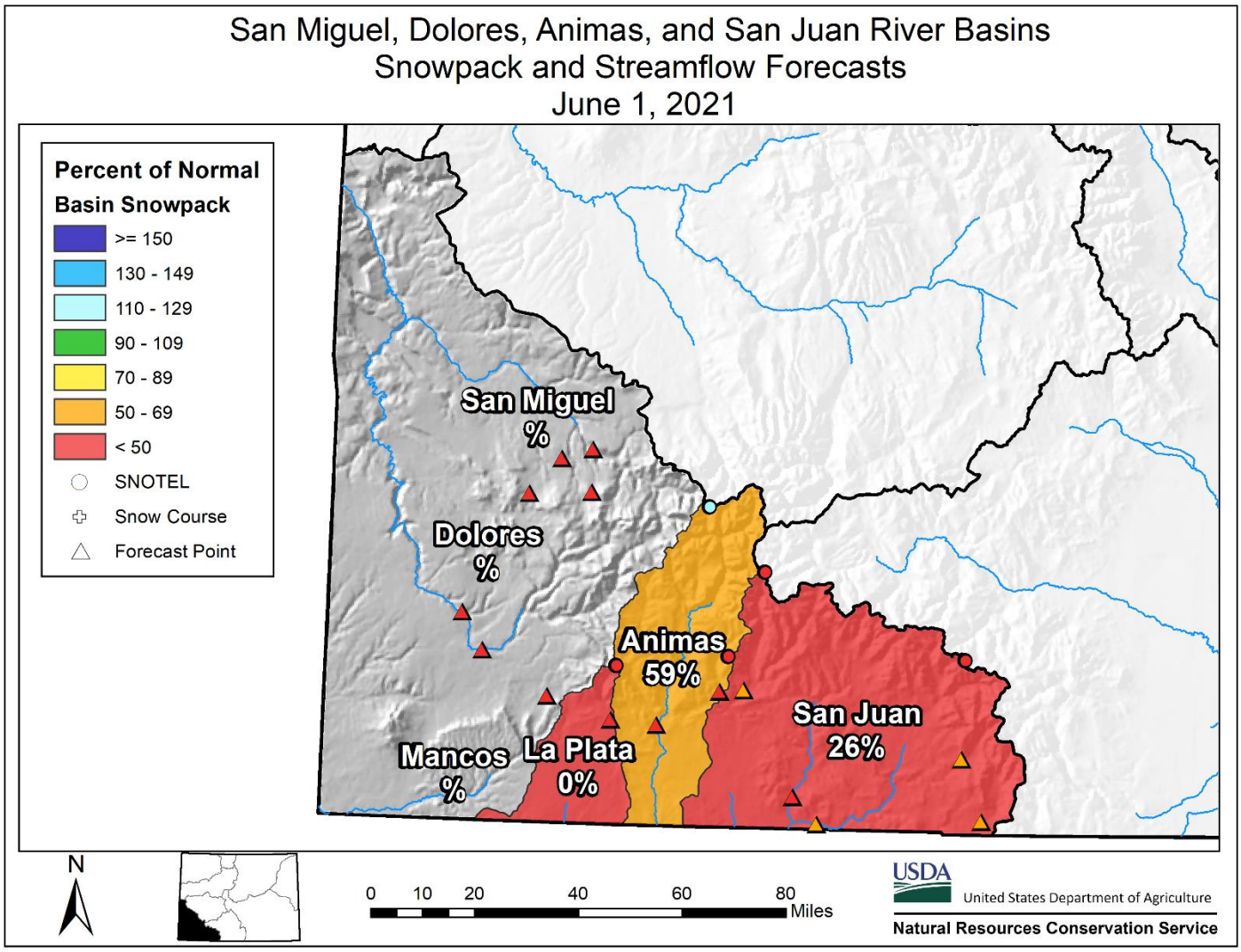
Snowpack in the combined southwest river basins is below normal at 38% of median. Precipitation for May was 111% of average which brings water year-to-date precipitation to 70% of average. Reservoir storage at the end of May was 58% of average compared to 92% last year. Current June – July streamflow forecasts range from 52% of average on the Rio Blanco at Blanco Diversion to 19% of average on the Mancos River near Mancos.

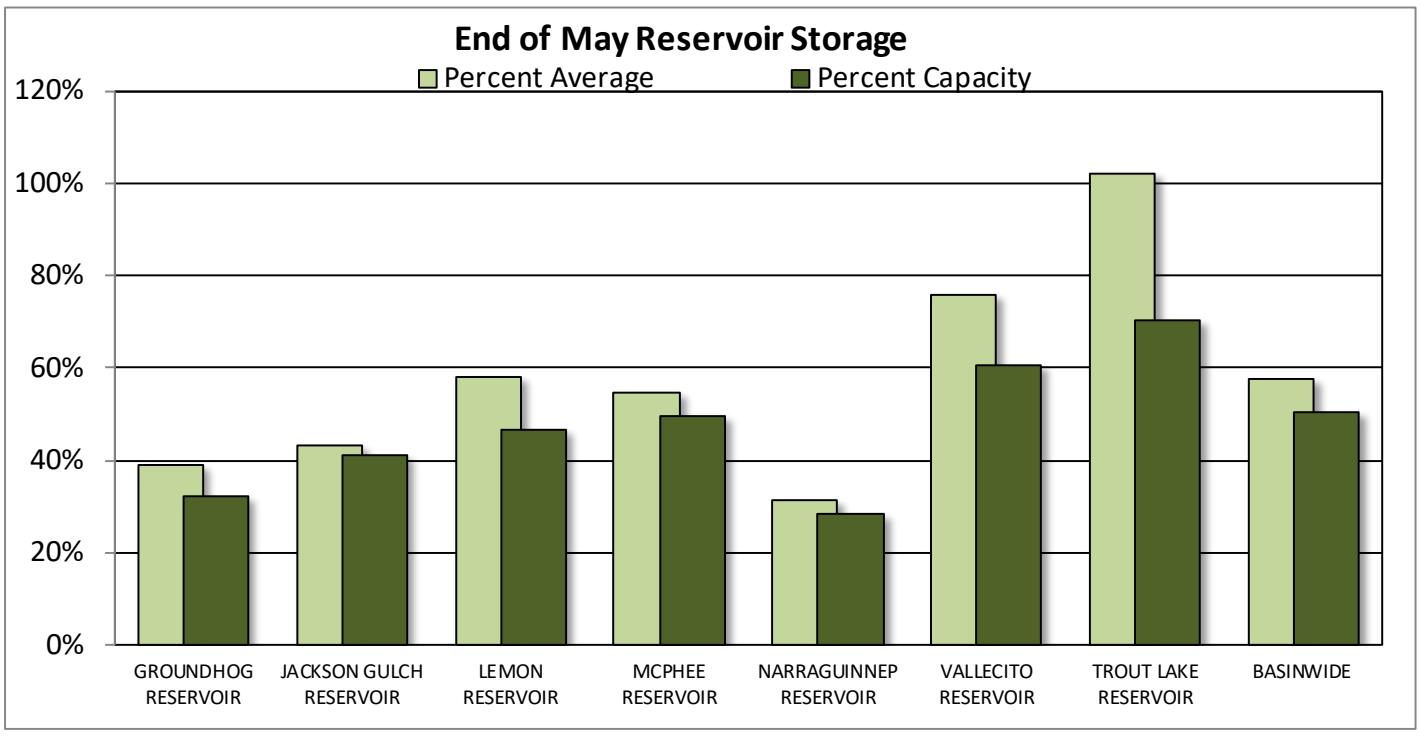


*SWE values calculated using daily SNOTEL data only



*SWE values calculated using first of month SNOTEL data and snow course measurements


San Miguel, Dolores, Animas, and San Juan River Basins
Snowpack and Streamflow Forecasts
June 1, 2021
Percent of Normal
Basin Snowpack
>= 150
130 - 149
110 - 129
90 - 109
70 - 89
50 - 69
< 50
SNOTEL
Snow Course
Forecast Point
San Miguel
%
Dolores
%
Animas
59%
San Juan
26%
Mancos
%
La Plata
0%
N
0 10 20 40 60 80
Miles
USDA
United States Department of Agriculture
Natural Resources Conservation Service


End of May Reservoir Storage
Percent Average
Percent Capacity
120%
100%
80%
60%
40%
20%
0%
GROUNDHOG RESERVOIR
JACKSON GULCH RESERVOIR
LEMON RESERVOIR
MCPHEE RESERVOIR
NARRAGUINNEP RESERVOIR
VALLECITO RESERVOIR
TROUT LAKE RESERVOIR
BASINWIDE

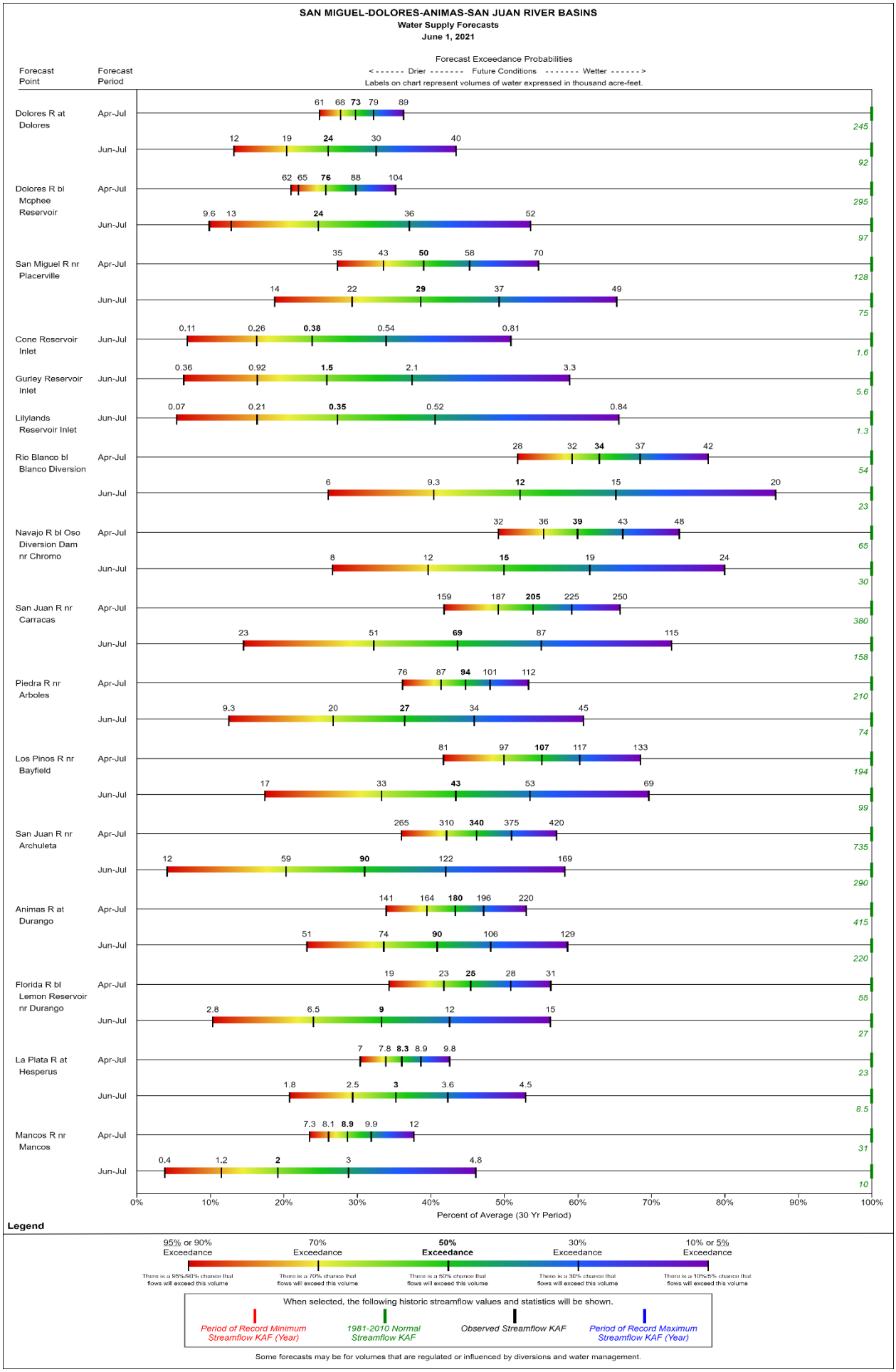
Watershed Snowpack Analysis June 1st, 2021

Sub-Basin	# of Sites	% Median	Last Year % Median
Animas	9	59	23
Dolores	5		
San Miguel	3		
San Juan	3	26	
Basin-Wide Total	19	38	9

*SWE values calculated using first of month SNOTEL data and snow course measurements

Reservoir Storage End of May 2021

Reservoir	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
GROUNDHOG RESERVOIR	7.1	19.2	18.2	22.0
JACKSON GULCH RESERVOIR	4.1	6.1	9.5	10.0
LEMON RESERVOIR	18.6	28.9	32.1	40.0
MCPHEE RESERVOIR	189.0	283.4	344.7	381.0
NARRAGUINNEP RESERVOIR	5.4	18.9	17.3	19.0
VALLECITO RESERVOIR	76.6	123.7	100.7	126.0
TROUT LAKE RESERVOIR	2.2	2.6	2.2	3.2
BASINWIDE	303.0	482.7	524.7	601.2
Number of Reservoirs	7	7	7	7


SAN MIGUEL-DOLORES-ANIMAS-SAN JUAN RIVER BASINS
Water Supply Forecasts
June 1, 2021
Forecast Exceedance Probabilities
< ------ Drier ------- Future Conditions ------- Wetter ------ >
Labels on chart represent volumes of water expressed in thousand acre-feet.
Forecast Point
Forecast Period
Dolores R at Dolores
Apr-Jul 61 68 73 79 89 245
Jun-Jul 12 19 24 30 40 92
Dolores R bl Mcphee Reservoir
Apr-Jul 62 65 76 88 104 295
Jun-Jul 9.6 13 24 36 52 97
San Miguel R nr Placerville
Apr-Jul 35 43 50 58 70 128
Jun-Jul 14 22 29 37 49 75
Cone Reservoir Inlet
Jun-Jul 0.11 0.26 0.38 0.54 0.81 1.6
Gurley Reservoir Inlet
Jun-Jul 0.36 0.92 1.5 2.1 3.3 5.6
Lilylands Reservoir Inlet
Jun-Jul 0.07 0.21 0.35 0.52 0.84 1.3
Rio Blanco bl Blanco Diversion
Apr-Jul 28 32 34 37 42 54
Jun-Jul 6 9.3 12 15 20 23
Navajo R bl Oso Diversion Dam nr Chromo
Apr-Jul 32 36 39 43 48 65
Jun-Jul 8 12 15 19 24 30
San Juan R nr Carracas
Apr-Jul 159 187 205 225 250 380
Jun-Jul 23 51 69 87 115 158
Piedra R nr Arboles
Apr-Jul 76 87 94 101 112 210
Jun-Jul 9.3 20 27 34 45 74
Los Pinos R nr Bayfield
Apr-Jul 81 97 107 117 133 194
Jun-Jul 17 33 43 53 69 99
San Juan R nr Archuleta
Apr-Jul 265 310 340 375 420 735
Jun-Jul 12 59 90 122 169 290
Animas R at Durango
Apr-Jul 141 164 180 196 220 415
Jun-Jul 51 74 90 106 129 220
Florida R bl Lemon Reservoir nr Durango
Apr-Jul 19 23 25 28 31 55
Jun-Jul 2.8 6.5 9 12 15 27
La Plata R at Hesperus
Apr-Jul 7 7.8 8.3 8.9 9.8 23
Jun-Jul 1.8 2.5 3 3.6 4.5 8.5
Mancos R nr Mancos
Apr-Jul 7.3 8.1 8.9 9.9 12 31
Jun-Jul 0.4 1.2 2 3 4.8 10
0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
Percent of Average (30 Yr Period)
Legend
95% or 90% Exceedance
There is a 95%/90% chance that flows will exceed this volume
70% Exceedance
There is a 70% chance that flows will exceed this volume
50% Exceedance
There is a 50% chance that flows will exceed this volume
30% Exceedance
There is a 30% chance that flows will exceed this volume
10% or 5% Exceedance
There is a 10%/5% chance that flows will exceed this volume
When selected, the following historic streamflow values and statistics will be shown.
Period of Record Minimum Streamflow KAF (Year)
1981-2010 Normal Streamflow KAF
Observed Streamflow KAF
Period of Record Maximum Streamflow KAF (Year)
Some forecasts may be for volumes that are regulated or influenced by diversions and water management.

How to Read Snowpack Graphs

The graphs show snow water equivalent (SWE) (in inches), using daily SNOTEL data. for the October 1 through September 30 water year. Basin "observed" SWE values are computed using SNOTEL sites which are characteristic of the snowpack of the particular basin. The SWE observations at these sites are averaged and normalized to produce these basin snowpack graphs.

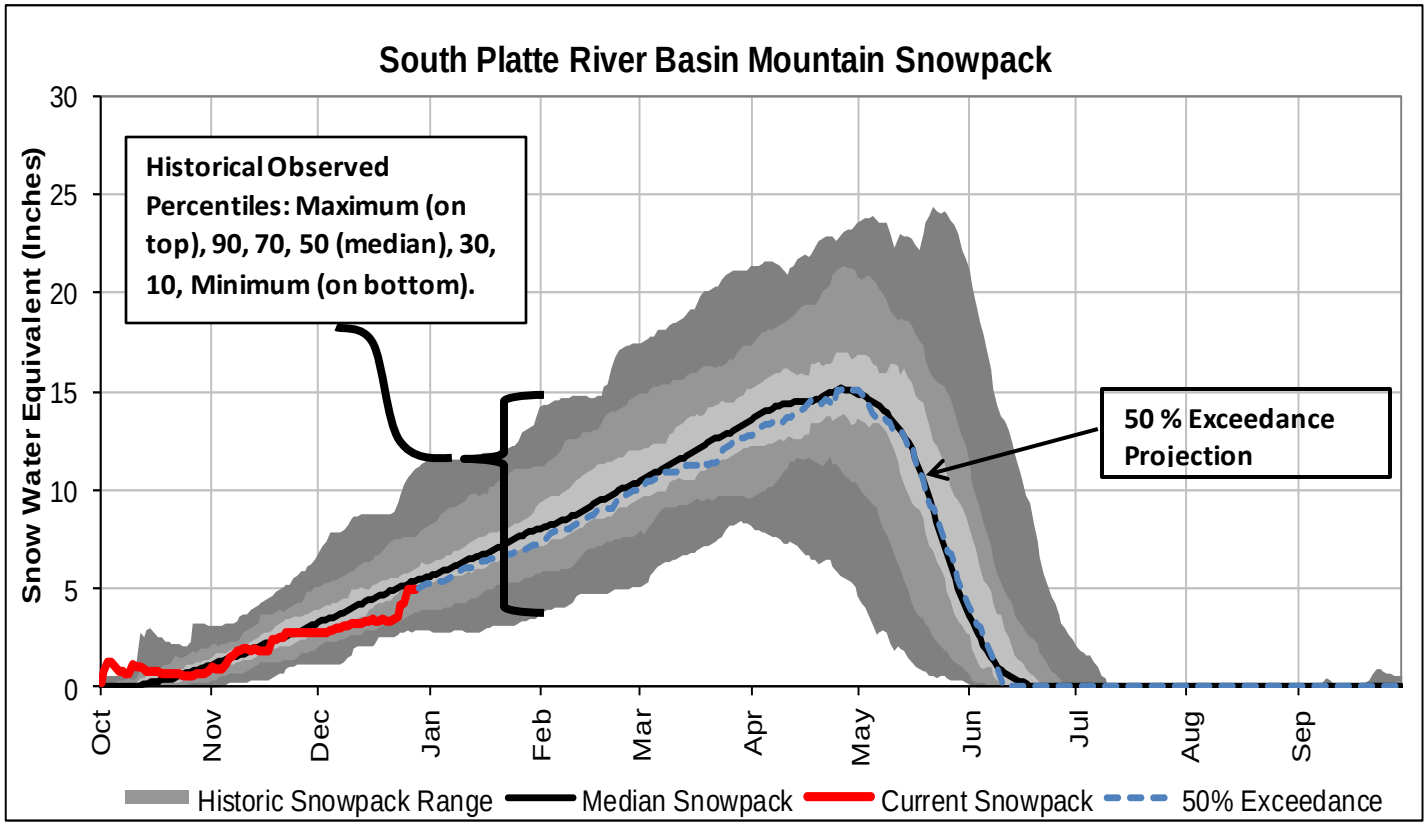
Current water year is represented by the heavy red line terminating on the last day the graphic was updated.

Historical observed percentile range is shown as a gray background area on the graph. Shades of gray indicate maximum, 90 percentile, 70 percentile, 50 percentile (solid black line), 30 percentile, 10 percentile, and minimum for the period of record.

50 % Exceedance Projection: The most probabilistic snowpack projection, based on the median snowpack is projected forward from the end of the current period to the end of the current water year.

For more detailed information on these graphs visit:

http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs144p2_062291.pdf



How Forecasts Are Made

For more water supply and resource management information, contact:

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Denver, CO 80225-0426
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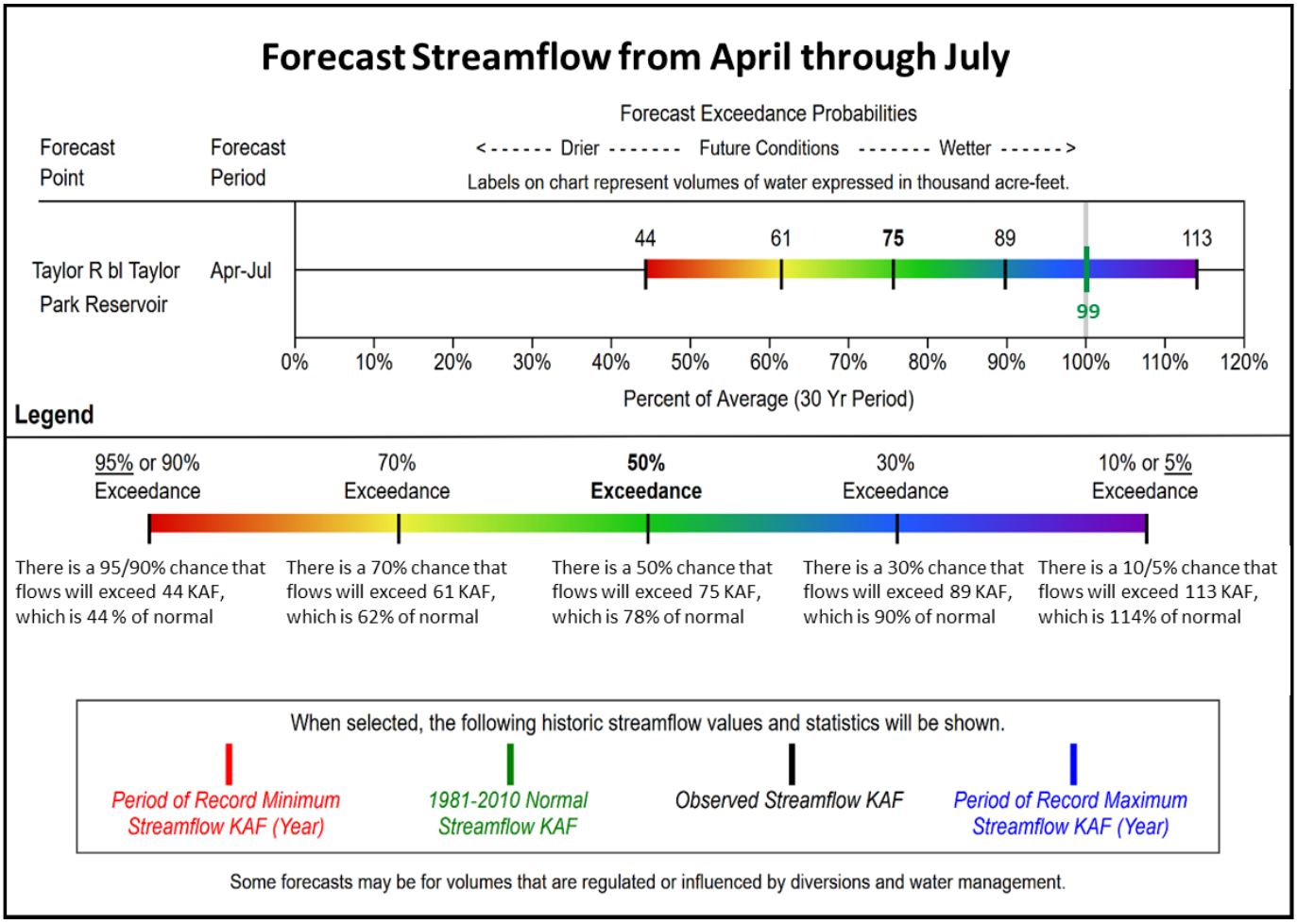
Most of the annual streamflow in the western United States originates as snowfall that has accumulated in the mountains during the winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Measurements of snow water equivalent at selected manual snow courses and automated SNOTEL sites, along with precipitation, antecedent streamflow, and indices of the El Niño / Southern Oscillation are used in computerized statistical and simulation models to prepare runoff forecasts. Unless otherwise specified, all forecasts are for flows that would occur naturally without any upstream influences.

Forecasts of any kind, of course, are not perfect. Streamflow forecast uncertainty arises from three primary sources: (1) uncertain knowledge of future weather conditions, (2) uncertainty in the forecasting procedure, and (3) errors in the data. The forecast, therefore, must be interpreted not as a single value but rather as a range of values with specific probabilities of occurrence. The middle of the range is expressed by the 50% exceedance probability forecast, for which there is a 50% chance that the actual flow will be above, and a 50% chance that the actual flow will be below, this value. To describe the expected range around this 50% value, four other forecasts are provided, two smaller values (90% and 70% exceedance probability) and two larger values (30%, and 10% exceedance probability). For example, there is a 90% chance that the actual flow will be more than the 90% exceedance probability forecast. The others can be interpreted similarly.

The wider the spread among these values, the more uncertain the forecast. As the season progresses, forecasts become more accurate, primarily because a greater portion of the future weather conditions become known; this is reflected by a narrowing of the range around the 50% exceedance probability forecast. Users should take this uncertainty into consideration when making operational decisions by selecting forecasts corresponding to the level of risk they are willing to assume about the amount of water to be expected. If users anticipate receiving a lesser supply of water, or if they wish to increase their chances of having an adequate supply of water for their operations, they may want to base their decisions on the 90% or 70% exceedance probability forecasts, or something in between. On the other hand, if users are concerned about receiving too much water (for example, threat of flooding), they may want to base their decisions on the 30% or 10% exceedance probability forecasts, or something in between. Regardless of the forecast value users choose for operations, they should be prepared to deal with either more or less water. (Users should remember that even if the 90% exceedance probability forecast is used, there is still a 10% chance of receiving less than this amount.) By using the exceedance probability information, users can easily determine the chances of receiving more or less water.

Interpreting the Forecast Graphics

These graphics provide a new way to visualize the range of streamflows represented by the forecast exceedance probabilities for each forecast period. The colors in the bar for each forecast point indicate the exceedance probability of the forecasts and the vertical lines on the bar signify the five published forecast exceedance probabilities. The numbers displayed above the color scale represent the actual forecasted streamflow volume (in KAF) for the given exceedance probability. The horizontal axis provides the percent of average represented by each forecast and the gray line centered above 100% represents the 1981-2010 historical average streamflow. The position of the gray line relative to the color scale provides a benchmark for considering future streamflows. If the majority of the forecast range is to the right of the gray line, there is a higher likelihood of above average streamflow volumes during the provided forecast period. Conversely, if the majority of the color bar is to the left of the average mark, below average volumes are more likely. The horizontal span of the forecasts offers an indication of the uncertainty in a given forecast: when the bar spans a large horizontal range, the forecast skill is low and uncertainty is high; when the bar is narrow in width, the forecast skill is higher and uncertainty lower.



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In addition to the water supply outlook reports, water supply forecast information for the Western United States is available from the Natural Resources Conservation Service and the National Weather Service monthly, February through June. The information may be obtained from the Natural Resources Conservation Service web page at http://www.wcc.nrcs.usda.gov/wsf/westwide.html

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Released by

Clint Evans
State Conservationist
Natural Resources Conservation Service
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Colorado
Water Supply Outlook Report
Natural Resources Conservation Service
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